"EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AND ANXIETY AMONG THE NEURO POST OPERATIVE PATIENT IN GOVERNMENT RAJAJI HOSPITAL, MADURAI"

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MASTER OF SCIENCE IN NURSING

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CERTIFICATE

This is to certify that this dissertation titled "**EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AND ANXIETY AMONG THE NEURO POST OPERATIVE PATIENT IN GOVERNMENT RAJAJI HOSPITAL, MADURAI**" *is the bonafide work done by* ***Mrs. V.SHEELA VARGHEESE,*** *College of Nursing, Madurai Medical College, Madurai-20 submitted to* **THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI-32** *towards the partial fulfillment of the requirements for the award of the Degree of* ***MASTER OF SCIENCE IN NURSING****, Branch-I Medical Surgical Nursing, under our guidance and supervision during the academic period from 2010-2012.*

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ABSTRACT

A study to assess “Effectiveness of foot massage on the level of pain and anxiety among the neuro post operative patient in government Rajaji Hospital, Madurai”.

Objective- Assess the effectiveness of foot massage on the level of pain and anxiety among the neuro post operative patient in government Rajaji hospital, Madurai. **Conceptual frame work**: Developed by the modified Roy adaptation model. **Design:** Non-equalant control group pretest – posttest by using purposive sampling technique. **Setting:** The study is been conducted in the neuro post operative ward in Govt. Rajaji Hospital, Madurai. **Subjects:** Total sixty samples are selected from the neuro post operative ward who underwent craniotomy. **Intervention:** Twenty minutes foot massage is provided for the experimental group for four days from the second post operative day. **Main outcome measures:** Using modified state anxiety scale and numerical pain scale patients are selected from the ward with pain scale more than three and anxiety score of mild and moderate. The subjects who were selected on the first fifteen days were assigned to experimental group and the subjects selected for the next fifteen day control group. For the experimental group foot massage was provided, the control group received the routine care. Post test score was assessed and compared between the experimental and control group. **Result:** The finding of this study found that there was a statistically significant difference on the level of post test pain score between the experimental and control group ($t = 4.34$, $P = 0.001$) and in anxiety it was ($t = 4.23$,$P = 0.001$). **Conclusion:** It was found out that foot massage is more effective in reduction of neuro post operative pain and anxiety.

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CHAPTER I

INTRODUCTION

The strong hands of God twisted the crown of thorns into a crown of glory; and in such hands we are safe.

Charles Williams

Whether a component of a disease process, the result of acute injury, or a product of a diagnostic or therapeutic procedure, pain should be relieved and stress should be decreased.

Pain after surgery is common. Pain after surgery is also normal and to be expected. Steps can be taken to minimize or eliminate pain, but pain that gets worse, especially if other symptoms like anxiety is present.

Post operative pain and anxiety can have a significant effect on patients recovery. An understanding of patient's attitude and concerns about post operative pain and anxiety is important for identifying ways health care professionals can improve post operative care.

All people in post operative period experience pain and anxiety. There are some incidence in which anxiety and pain is interlinked. However all most all the patients having pain and anxiety because of their surgical procedure, change in the environment, change in life role etc.

It is still a common belief that patients undergoing craniotomy experience minimal pain in the post operative period. However this old stigma is not substantiated by good scientific data on the contrary many clinical studies indicates that post operative pain management after intracranial surgery is poor and is associated with unsatisfactory pain relief.

A Study conducted by department of anesthesia and critical care. The University of Chicago hospital. USA. To assess patients post operative pain experience and the status of acute pain management they conduct a national study by using telephone questioners. A random sample of 250 adults who had undergone surgical procedures recently. Approximately 80% of patient's experienced acute pain, after surgery of these patient 86% had moderate to severe pain.

In 1995, stone ham and Walters sent a postural questionnaire to members of the Neuro anesthesia society of Great Britain and regarding postoperative neurosurgical analgesia. They reported that over of the 110 respondents thought the analgesia was inadequate.

A year later same investigations reported that 84% of patient who had their post operative pain treat with codain complained of moderate to severe post operative pain at sometime during the first 24hours after surgery.

Now it is the time to think for an effective pain and anxiety management system in our health setting for the early patient recovery.

Being a part of health team member the nurses can think of all the dimension of health physical, mental, social and spiritual wellbeing. The system of care should be designed to meet the most common type of needs and have the capacity to respond to the individual patients choices and preferances.

According to jean Watson carative factors forming a humanistic altruistic system of values and developing a helping and trusting caring relationship are essentials of holistic nursing.

The idea of touch can heal is an old concept, touch is an primal need as necessary for growth and development. It is the fundamental medium for massage there are almost many styles of massage, the foot massage is gently rubbing the skin stroking towards the pressure areas .this can be utilized even in the hospital setting.

In 2005, road traffic injuries resulted in the death of an estimated 110 000 persons, 2.5 million hospitalizations,8–9 million minor injuries and economic losses to the tune of 3% of the gross domestic product (GDP) in India.

Neurosurgery department is one of the oldest department in Madurai medical college. The department of neurosurgery Madurai medical college, an icon in the development of medical science was born in the year 1962.The department has been in service to the society since then and have saved the life of a countless number of people who were involved in life endangering accidents deemed by other major hospitals as unsalvageable and also changed the life of so many people who would have otherwise died of cancers of brain.

1.1 NEED FOR THE STUDY:

The pain and anxiety in the post operative periods determines and complicate the care provided in the post operative period. Especially in the neuro post operative patient it can increase the glucose metabolism can further aggravate the illness.

A Variety of behavioral technique have been developed and tested for managing the well being of the patients especially during the post operative period. The world of technology reduced the physical work touch and contact with the patient. A humanistic touch is necessary to reduce the pain and their anxiety.

The reason for effective pain management are compelling there is a well known correlation between the frequency of complication and localization of pain.(benedetti2000)intense pain stimulate stress response which adversely affects cardiac and immune system. When pain impulses are transmitted, muscle tension increases as does local vasoconstriction .The ischemia in the affected area causes further stimulation of pain receptors.

Almost all postoperative patients need psychological support during the post operative period as the patients move to the period of early post operative period, measures are implemented, to provide a feeling of stability.

Roberts in a European journal of anesthesiology addresses many of the issues. The response to the analgesic questionnaire point out that codain is still the most commonly used analgesic after intracranial surgery in Great Britain and that is often administer I.M. Her results also show that formal pain assessment (the fifth"vital sign") is not done routinely. Thus Roberts's results point out the urgent need for evidence based pain management techniques, the importance of routine pain assessment and the potential need of to standardize post craniotomy pain management.

From the current article by Roberts and the literature, it is clear that several studies should be conducted to improve the safety and efficacy of post eramiotomy pain management.

The anxiety among the post operative patient especially in neurosurgery is very high as it is brain is considered as vital organ usually the people afraid of residual effect of the surgery.

It is necessary to provide to pain medication and we have to reduce the anxiety without much irritation to the brain cell. So we need an effective pain management measure and anxiety reducing agents for the maximum and uneventful post operative period.

Florence Nightingale clearly articulated that Nursing is an art and science. Modern medicine give much emphasis for the science. How quickly can we do protocols and treatment? But truly the finest of nursing is blinding in the art, which is the holistic perspective.

In integrating the complementary therapy touch is the first sense and which developed from the early stage of formation for the life in the world. Massage therapy believed that massaging at the foot or hand stimulates the flow of energy through the zone, clearing any blockage and replenishing the supply of energy to it, this stimulating the body's own healing mechanism. By massaging the area breakdown the energy sources and clears the area.

Medical research has shown that the benefits of massage include pain relief, reduced trait anxiety and depression and temporarily reduced the blood pressure, heart rate. Theories behind what massage might do include blocking norception (gate control theory) activating the para sympathetic nervous system, which may stimulate the release of endorphins and serotonin, preventing fibrosis or sear tissues, increasing the flow of lymph, and improving sleep.

A study conducted by Furlan and et all in 2003 find out that massage reduce chronic low back pain .Another study by Hermandez Reif and et all in 2002 showed the effect massage in reducing chronic tension headache.

Some study have find out that massage can be used for stress relief, Managing anxiety and pain depression, stiffness, blood pressure control, infant growth sports related injury, immunity cancer treatment. Further more research is needed & confirms the benefits of the massage.

Beyond the benefit for specific condition or diseases, some people enjoy massage because it often involves caring comfort, a sense of empowerment, and creating deep connection with their massage therapist.

So being a part of holistic nursing the nurses has to consider the needs and safety measures of the patient. She has to think health in all the dimentors of like social, spiritual, physical and mental well being. Looking in to this the complementary medicine massage is more effective in reducing the physical suffering (i.e. the pain) and mental injury (i.e. the anxiety).

The researcher believe that, all nurses have an inherent holistic perspective being holistic considerations a complementary intervention for pain and anxiety can improve the professional touch and the holistic concept.

In the hospital (the research setting) because of the increased number of patient we may fail to provide a holistic approach in the care of the patient. As a part of providing real touching care and reduce the patient suffering Researcher have selected topic as.

1.2 STATEMENT OF THE PROBLEM

"EFFECTIVENESS OF FOOT MASSAGE ON THE LEVEL OF PAIN AND ANXIETY AMONG THE NEURO POST OPERATIVE PATIENT IN GOVERNMENT RAJAJI HOSPITAL, MADURAI".

1.3 OBJECTIVES:

- To assess the level of pain on neuro postoperative patient
- To assess the level of anxiety on neuro postoperative patient
- To assess the effectiveness of foot massage on pain and anxiety among the neuro post operative patient with the control and experimental group.
- To evaluate the association between selected demographic and clinical variables with pain and anxiety.

1.4 HYPOTHESES:

H_1 : There will be significant difference in pain and anxiety among the neuro post operative patient before and after the treatment of the foot massage procedure.

H_2 : There will be a significant difference between the experimental and control group in pain and anxiety after foot massage among the neuro post operative patients.

1.5 OPERATIONAL DEFINITION:

Effectiveness:

In this study it is the impact produced by the foot massage on pain and anxiety where by the pain and anxiety reduces in the post intervention level than the pre intervention level .

Foot massage:

In this study it refers the massage gently and rhythmically to attain relaxation response for 10 minutes in each leg.

Level of Pain

In this study it is an unpleasant sensation experienced by the individual due to the incision or invasive procedure on the head. This is measured by a numerical pain scale.

Level of Anxiety:

In this study it refers irritable and restless feeling due to hospitalization and unknown prognosis about surgical procedure .This is measured by modified state trait anxiety scale.

Neuro post operative patient

In this study it refers to the patient is admitted in the neuro post operative ward and who underwent surgery on the head and also having anxiety and pain.

1.6 ASSUMPTION:

- The patient who are in the post operative ward will have pain and anxiety.
- Pain and anxiety will be reduced by foot massage.

1.7 DELIMITATION:

- Study population 60 samples.
- Study period is 6 weeks.
- Only in the neuro ward.

1.8 PROJECTED OUTCOME:

The study expected to reduce the pain and anxiety of the neuro post operative patient with foot massage by providing foot massage patients comfort will be increased and it is an effective non pharmacological therapy for the reduction of pain.

CHAPTER II

REVIEW OF LITERATURE

A review of literature is a compilation of resources that provide the ground work for further study. It helps with the conceptualization of research problems and the determination of specific problems and the determination of specific methodology to be used for further exploration of the problems. (Talbot LA 1995).

Thus the review of literature is an essential step in the development of a research project. It helps the researcher to design the proposed study in a scientific manner to achieve the desired result. It helps to determine the gaps consistencies and inconsistencies in the available literature about a particular subject under the study.

This chapter attempts to present a review of studies alone, methodology adopted and conclusion assured by earlier investigators; which helps to study the problem in depth. The sources to obtain more information on the selected topic were internet search, text book, published journals, published and un published thesis. In this chapter, the researcher presents the review of literature under the following headings:

1. Literature related to pain

2. Literature related to anxiety.

3. Literature related to Effectiveness of foot massage

2.1 STUDY RELATED TO PAIN

1. Rocha filho and et al (2003) conducted a prospective study in Sao Paulo medical school brazil to assess the characteristics of headache during the 6 months after craniotomy. The study include 79 patients who underwent treatment for aneurism. The data were collected Semistructured interviews, headache diaries, the Hospital Anxiety and Depression Scale and the Epworth Sleepiness Scales, the Short Form-36 Health Survey (SF-36) and McGill Pain Questionnaire were used. Seventy-two patients had headaches, half before the fifth day after surgery. Changes were observed in headache diagnosis, side and site in the postoperative period. Headache frequency increased immediately after surgery and then decreased over time. Headache frequency was associated with depressive and anxiety symptoms. Pain intensity was higher in women and in patients with more anxiety symptoms. An incidence of post-craniotomy headache of 40% was observed according to International Headache Society classification criteria, 10.7% of the acute and 29.3% of the chronic type. The bodily pain domain of the SF-36 was worse in patients with more anxiety symptoms. Greater frequencies of headache were associated with lower scores on bodily pain and social functioning.

2. Alfhild Dihle et al (2004) conducted a descriptive study to understand how nurses contribute to postoperative pain management in a surgical setting and to identify barriers to achieving optimal postoperative pain alleviation. Observations and in-depth interviews were conducted with nine nurses on three surgical wards at two hospitals. Each nurse was observed during five shifts, day and night, and interviewed after the final observation. The collection and analysis of data followed principles of qualitative research. The study revealed a gap between what nurses said and did in postoperative pain management, and this gap was smaller when the nurses took an active approach. An active approach towards patients about postoperative pain seemed to enhance pain alleviation.

3. Thibault M, et al.(2005) conducted a retrosepective study CHUM, Hospital Canada.to assess the intensity of postoperative pain in relation to the location of craniotomy. Data were collected from the charts 299 patients who underwent a craniotomy The severity of post-craniotomy pain was assessed by collecting scores

obtained using an 11-point verbal rating scale and calculating the cumulative analgesic requirements for the first 48 hr postoperatively. Data were compared according to the craniotomy location. On average, 76% of patients experienced moderate to severe postoperative pain. Frontal craniotomy was associated with lower pain scores than four of six craniotomy sites analyzed, a significant difference ($P < 0.05$) compared with all other groups except for parietal craniotomies. The study shows that the intensity of postoperative pain in neurosurgery is affected by the site of craniotomy.

4.Tanskanen, et al (2005) conducted a study in Helsinki University Central Hospital, Finland on post operative patient about the pain intensity and PCA. They evaluated Moderate to severe pain occurs after craniotomy in 60% of patients ,the feasibility and safety of patient-controlled analgesia (PCA) with oxycodone in neurosurgical patients, and compared the efficacy of paracetamol with ketoprofen.In the study there were 45 patients, who received either paracetamol 1000 mg or ketoprofen 100 mg three times a day. Oxycodone-boluses 0.03 mg/kg were given by PCA-device maximally three times an hour, lock-out time 10 min. The amount of oxycodone used, pain scores and side-effects were recorded. The study showed the result as ketoprofen group required less oxycodine than the paracetamol group (medians 37.1 mg vs 19.6 mg, P (0.05).

5.De Benedittis G, et al .(2006) conducted a pilot study in the Institute of Neurosurgery, University of Milano, Italy to assess the important pain variables in 37 consecutive patients who underwent various brain neurosurgical procedures. Postoperative pain was more common than generally assumed (60%). In two-thirds of the patients with postoperative pain, the intensity was moderate to severe. Pain most frequently occurred within the first 48 hours after surgery, but a significant number of patients endured pain for longer periods. Pain was predominantly superficial (86%), suggesting somatic rather than visceral origin and possibly involving pericranial muscles and soft tissues. Results of this pilot study indicate that postoperative pain after brain surgery is an important, although neglected, clinical problem, that deserves greater attention by surgical teams, to provide better and more appropriate treatment.

2.2 STUDY RELATED TO ANXIETY

1.Imtiaz Ahmad Dogar, et al (2003) Conducted study examined the prevalence and risk factors for depression and anxiety in hospitalized cardiac patients in Pakistan. One hundred patients admitted to a cardiac unit over a period of eight weeks were evaluated with clinical interview using Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria, Hospital Anxiety and Depression Scale (HADS), and Quality of Life (QoL) scale. Sixty eight met the criteria for either major depressive disorder, generalized anxiety disorder, or both. A total of 87.5 percent of the entire female sample met the criteria for either a depressive disorder, an anxiety disorder or both. The study shows high prevalence of major depressive disorder and generalized anxiety disorder in cardiac patients.

2.S.C.C.M. Teunissen and et all (2007) conducted a study assess the prevalence anxiety and depression among the hospitalized cancer patient in Academic Medical Center, Amsterdam. Anxiety and depressed mood were assessed in a hospitalized advanced cancer population (n = 79) primarily by the Hospital Anxiety and Depression Scale (HADS), and also by a single-item question `Are you anxious and/or depressed?' and by the Edmonton Symptom Assessment System (ESAS). Physical symptoms were assessed by a semi-structured interview and by the ESAS. Thirty-four percent of the patients reported anxiety, 56% depressed mood and 29% both, as assessed by the HADS. The correlations between HADS, the single-item question and the ESAS were low. No association was found between anxiety or depressed mood and the presence of physical symptoms. Patients who were anxious or depressed had higher ESAS scores for insomnia and drowsiness; scores for pain, anorexia, asthenia, nausea and dyspnea were independent of anxiety and/or depressed mood. The relationship between anxiety, depressed mood and the presence and intensity of physical symptoms in hospitalized advanced cancer patients is very limited.

3. Mohammad Faisal Jafar (2009) a study conducted in a population of 300 clients who have admitted for surgery to measure the frequency of post operative anxiety in patients admitted to the hospital found that Significant postoperative anxiety was seen in 62% patients (73% females and 42% males). Frequency of

anxiety decreased with advancing age but increased with higher educational status. A total of 77% of patients with no previous exposure to surgery and 26% of patients who had previous surgery, were anxious. Also 49% of patients who had visited the clinic and 86% of patients who had not visited the clinic were anxious. VAS correlated with STAI in 90% cases. Cut off value of VAS which showed positive correlation with STAI was 45. Frequency of post operative anxiety was 62%. Female gender, younger age and higher educational status were positively correlated while prior experience of surgery while preoperative anesthesia clinic visit were negatively correlated with anxiety. VAS correlated well with STAI.

2.3 STUDY REGARING THE EFFECT OF MASSAGE

1.Mehling WE, (1999) conducted a randomized, controlled trial assessing the effect of massage and acupuncture on 138 postoperative cancer patients. Cancer patients undergoing surgery were randomly assigned to receive either massage and acupuncture on postoperative Days 1 and 2 in addition to usual care, or usual care alone, and were followed over three days. Patients' pain, nausea, vomiting, and mood were assessed at four time points. Patients were randomly assigned in a 2:1 scheme to receive massage and acupuncture (n=93) or to receive usual care only (n=45). Participants in the intervention group experienced a decrease of 1.4 points on a 0-10 pain scale, compared to 0.6 in the control group (P=0.038), and a decrease in depressive mood of 0.4 (on a scale of 1-5) compared to the control group (P=0.003). Providing massage and acupuncture in addition to usual care resulted in decreased pain and depressive mood among postoperative cancer patients when compared with usual care alone.

2. Hsiao-Lan Wang, et al.(2002) conducted a study among the post operative patients in Methodist Hospital, Indiana. To assess the effectiveness of foot massage on reduction of pain and anxiety .The study covered 18 participants, who had undergone head surgery, neck surgery, gastrointestinal surgery, urological surgery, gynecological surgery or plastic surgery. Findings showed that after the 20 minute massage, the patients perceived pain intensity and perceived distress were reduced, and their percentage of pain relief were increased. There was also a significant

decrease in the respiratory rate and heart rate, although there was no decrease in blood pressure.

3.Stephenson N, et all (2002**)** Conducted a experimental pretest/post-test design study to compare the effects of partner-delivered foot reflexology and usual care among the patients with metastatic cancer on perceived pain and anxiety. 86samples from four different hospitals (42experimental and 44 control) of patients with metastatic cancer and their partners were selected for the study The intervention included a 15- to 30-minute teaching session on foot reflexology to the partner by a certified reflexologist, an optional 15- to 30-minute foot reflexology session for the partner, and a 30-minute, partner-delivered foot reflexology intervention for the patient. The control group received a 30-minute reading session from their partners. Following the initial partner-delivered foot reflexology, patients experienced a significant decrease in pain intensity and anxiety.

4.Quattrin R, Zanini et all(2002) conducted a study to examine the effectiveness of reflexology foot massage in hospitalized cancer patients undergoing second or third chemotherapy cycles in University of Udine, Italy. The study consisted of 30 patients being admitted to the oncology Only 15 of the 30 participants received therapeutic massage. The subjects' self-reports of anxiety (measured by the Spielberger State-Trait Anxiety Inventory) were recorded before, after and 24 hours after the intervention.There was an average decrease of 7.9 points on the state-anxiety scale in the treatment group and of 0.8 points in the control group ($P < 0.0001$).this showed the effectiveness foot reflexology.

5. Quinn, C.et all. (2002). Conducted a atudy on patients with chronic tension headache to know the effectiveness of Massage therapy in reduction of episodes of headache .This study examined the effects of massage therapy on chronic, nonmigraine headache. Four chronic tension headache sufferers (aged 18-55 yrs) received structured massage therapy treatment directed toward the neck and shoulder muscles during a 4-wk period. The result showed Massage therapy reduced the number of weekly headaches. Headache frequency was significantly reduced within the initial week of massage treatment, and continued for the remainder of the study. A

trend toward reduction in average duration of each headache event between the baseline period and the treatment period was also observed.

6. Foster, K.A., et all (2004). Conducted a study to find the effectiveness of Trager massage in the treatment of chronic headache Thirty-three volunteers with a self-reported history of chronic headache and with at least one headache per week for at least 6 months received Trager massage. Participants randomized to Trager massage demonstrated a significant decrease in the frequency of headaches, improvement in head quality of life and a 44% decrease in medication usage.

7. Captain sei young oh and et all(2005) conducted a one group pre test post test design study to evaluate the effectiveness of hand reflexology on post operative patient in the reduction of pain ,feeling and nursing practice in the clinical setting. Study include 45 patients who under gone different surgeries provided with 5 minutes of hand reflexology for both the hands. Data were collected using VAS and a questionnaire regarding nursing practice. The result revealed that after receiving hand reflexology therapy, the subjects showed significant pain relief (t =- 4.94, p =. 0001), improvement in feeling (t = 19.44, p = 0001) and an increase in skin temperature (t = 3.54, p =. 001). 2. The applied skills that the participants preferred were press-rotate (80.0%), press-walk (35.56%) and press-rolling (31.11%). The effectiveness of nursing practice scored 3.99 ± 1.97 out of 5. Nurse-Patient Relationship and effective response of nursing intervention ranked the highest 4.31.Hand reflexology was considered as an effective nursing intervention in the clinical settings.

8. Tsay SL, et al (2005) conducted a study in Taipei, Taiwan to study the effect foot reflexology on post operative pain. Sixty-one patients who had received surgery for gastric cancer or hepatocellular carcinoma were randomly allocated to an intervention (n = 30) or control (n = 31) group. Patients in the intervention group received the usual pain management plus 20 minutes of foot reflexotherapy during postoperative days Patients in the control group received usual pain management. Outcome measures included the short-form McGill Pain Questionnaire, visual analog scale for pain, summary of the pain medications consumed, and the Hospital Anxiety and Depression Scale. Using generalized estimation equations and controlling for

confounding variables, less pain ($P < .05$) and anxiety ($P < .05$) over time were reported by the intervention group compared with the control group. In addition, patients in the intervention group received significantly less opioid analgesics than the control group ($P < .05$).

9. LaurieBarclay,(2005) conducted a study on Massage as an effective adjunct treatment to relieve acute postoperative pain in patients who had major surgery, according to the results of a randomized controlled trial, 605 patients undergoing major surgery were randomized to 3 groups: control group receiving routine care, individualized attention from a massage therapist for 20 minutes, or back massage by a massage therapist every evening for up to 5 postoperative days. The results were assed visual analog scale (VAS) scores for short- and long-term (>4 days) pain intensity, pain unpleasantness, and anxiety. Preintervention vs postintervention effects were greater in the massage group than in the control group for reduced pain intensity ($P = .001$), pain unpleasantness ($P < .001$), and anxiety ($P = .007$). Compared with the control group, patients in the massage group also had a faster rate of decrease in pain intensity ($P = .02$) and unpleasantness ($P = .01$) during the first 4 postoperative day

10.Tanyakhanok Pongpiyaipibon(2005) conducted a quazi experimental study in Suratthanee Hospital thailand to assess the effectiveness of foot reflexology program on pain and frequency of taking pain medication in patients after prostate ectomy.40 patients were taken for the surgery equally matched pair were assigned to experimental and control group. The experimental group provided with 10 minutes foot reflexology date were collected with neumerical pain scale. The intervention instrument was the symptom management with reflexology program on pain, consisted of four sessions: symptom experienced assessment , knowledge providing , reflexology and evaluation phases. Data were analyzed by using descriptive statistics and t-test. The findings were the posttest mean score on pain of an experimental group was significantly lower than of the pretest ($X = 7.230$, $X = 3.75$, $t=16.335$, $p<.001$) 2. The posttest mean score of pain of an experimental group was significantly lower than of a control group0 ($X = 3.75$, $X =6.65$, $t =-10.627$, $p<.001$) 3. The posttest mean score of frequency pain medication taking of an experimental group was significantly

lower than of a control group (X = 1.05, X = 1.85, t-=-2.36, p<.05) the massage was effective in reduction of pain and reduced the frequency of medication.

11.Lawler, S. et all (2006). Conducted a randomized, controlled trial of massage therapy as a treatment for migraine. Migraine sufferers (N = 47) who were randomly assigned to massage or control conditions completed daily assessments of migraine experiences and sleep patterns for 13 weeks. Massage participants attended weekly massage sessions during Weeks 5 to 10. State anxiety, heart rates, and salivary cortisol were assessed before and after the sessions. Perceived stress and coping efficacy were assessed at Weeks 4, 10, and 13. Compared to control participants, massage participants exhibited greater improvements in migraine frequency and sleep quality during the intervention weeks and the 3 follow-up weeks. Trends for beneficial effects of massage therapy on perceived stress and coping efficacy were observed. During the sessions, massage induced decreases in state anxiety, heart rate, and cortisol.

12. Kshettry VR, et al (2006) Conducted randomized study on post operative patient to assess the effectiveness of alternative therapy with standard care .One hundred four patients undergoing open heart surgery were to receive either complementary therapy (preoperative guided imagery training with gentle touch or light massage and postoperative music with gentle touch or light massage and guided imagery) or standard care. Heart rate, systolic and diastolic blood pressure, and pain and tension were measured preoperatively and as pre-tests and post-tests during the postoperative period. Complications were abstracted from the hospital record. The result of the study highlighted that pretreatment and post treatment pain and tension scores decreased significantly in the complementary alternative medical therapies group on postoperative days 1 ($p < 0.01$) and 2 ($p < 0.038$). The complementary medical therapies protocol was implemented with ease in a busy critical care setting and was acceptable to the vast majority of patients studied. Complementary medical therapy was not associated with safety concerns and appeared to reduce pain and tens

13.Dr. Brent Bauer(2009) did a randemised control trail study on the Two hundred patient who underwent and CABG and/or cardiac valve surgery The purpose of this study was to evaluate the effect of two 20 minute massages on patient reported pain, anxiety and tension on day 2 and day 4 post cardiac surgeries. There was a statistically significant difference in pain (-1.5±2.0, -1.5±1.7), anxiety (-1.4±2.4, -1.7±2.2) and tension (2.4±2.0, 2.2±2.2) before and after massage on days 2 and 4 (each $p<0.001$). There was a statistically significant difference in pain on day 3 for those patients who received standard care (-0.6±2.2, $p=0.02$). There was a statistically significant difference in the change in tension (-1.0±0.3) on day 2 and change in pain (-1.0±0.2), tension (-1.5±0.3) and anxiety (-1.4±0.3) on day 4 between the two treatment groups (each $p<=0.01$).

2.4 CONCEPTUAL FRAMEWORK

ROY'S ADAPTATION MODEL - MODIFIED

A conceptual framework is a theoretical approach to study the problems that are scientifically based, which emphasizes the selection, arrangement and classification of its concepts.

A conceptual framework is referred to as the interrelated concepts or abstracts that are assembled together in some rational scheme by virtue of their relevance to a common theme. The overall objective of a framework is to make scientific findings meaningful and generalsable and they also give direction for relevant questions of practical problems

The conceptual framework for this study is developed by the investigator based on Roy's Adaptation Model. This theory focus on the adaptation of the individual to various stimuli, both from the internal and outside environment. An individual's behavior is based on the input, control process, output, and feedback mechanism

Sister Calista, Roy views people as individuals who are in constant interaction with the surrounding environment, an integral whole with biological, psychological, and social components. Individuals have certain needs which they endeavour to meet in order to maintain integrity. The needs are divided into adaptive needs such as physiological, self-concept, role function, and interdependence.

Input: They are the various stimuli which provoke or stimulate the individual. The adaptation level of the client/ individual is determined by the different stimuli to which he/she is exposed. The client /individual respond to three different stimuli the 1)focal stimuli the 2)contextual stimuli the 3) residual stimuli . To cope with these stimuli, he/she requires various types of comfortive and supportive measures like positioning, massage, relaxation techniques, and deviation techniques.

Focal stimuli: Focal stimuli are those which immediately confront the person. In this study, it is the postoperative pain and anxiety experienced by the neuro post operative patients

Contextual stimuli: Contextual stimuli are the other internal and external stimuli which were identified the person as having a positive or negative influence on the situation. In this study, the postoperative pain and anxiety will be influenced by contextual stimuli like altered nutrition, fear of the unknown surroundings, and poor social support.

Residual stimuli: Residual stimuli are those internal factors which were experienced in the past and can influence in the person both positively or negatively. In this study, they are the past experiences, previous hospitalization, socio cultural orientation, contact with healthcare professionals, pain threshold, and lack of knowledge regarding the outcome.

Control process: The control process includes biological and psychological coping mechanisms. Regulator and cognator are the two sub-system coping mechanisms.

Regulator: A sub-system coping mechanism which responds automatically through neural-chemical-endocrine processes. In a neuro postoperative patient, , nerves transmit pain stimuli to the dorsal root ganglia and to the posterior horn of the spinal cord. From there the impulse will be transmitted to the thalamus and to the sensory cortex of the brain.

The cognator: Responds through the complex process of perception, information, processing, learning, judgment and emotion. The individual uses the cognitive subsystem by perceiving the information given by the caregivers. In this study the investigator explains the impact of foot massage on postoperative pain and anxiety the client will understand, appreciate and cooperate positively and manifest positive behavior.

Output: Output is the decreased or increased perception to the stimuli and corresponding adaptive or maladaptive behavioral responses.

In this study, it is the decreased intensity of postoperative pain and anxiety corresponding adaptive behavioral responses.

Feedback: Feed back or the responses for the perceived stimuli in this study the a positive response is expected from the clients.

The adaptive modes: Adaptive or effectors modes are a classification of ways of coping that manifest regulator or cognator activity.

The physiological mode: It involves the body's basic needs and ways of dealing with adaptation with regard to fluid and electrolytes, nutrition, circulation, oxygenation, elimination, exercise and rest, and the regulation of senses, temperature and endocrine function..

Self-concept mode: Self-concept is related to the basic need for psychic integrity, composite of beliefs, and feelings that one holds about oneself at a given time. In this study, self-concept refers to the maintenance of morale, spiritual self, and confidence which are adaptive responses.

Role function mode: Role function is the performance of duties based on given positions in the society. Accepting one's own role as head of the family, mother, teacher, etc are adaptive responses.

Interdependence mode: It is the relationship with significant others and the supportive system. In this study, cooperation, maintenance of good interpersonal relationship with the care providers and the investigator are adaptive responses.

Foot massage will help conserve energy, increase circulation, reduce heat rate and blood pressure relieve pain, promote comfort and relax muscles of the individual during postoperative period

CHAPTER III

METHODOLOGY

Research methodology is the systematic way of doing a research to solve a problem. It comprises of the statement of the problem. The objectives of the study, the hypotheses that have been formulated, the variables under study, the methods used for data collection and the statistical methods used for analyzing the data and the logic behind it. (**Kothari CR, 2003**) On the whole it gives a general pattern of gathering and processing the research data.

3.1. RESEARCH APPROACH

Quantitative research approach in which the data are explained in numerical value.

3.2.RESEARCH DESIGN

Non equlant control group pre test post test design experimental design is used

E - O_1 x O_2

C - O_1 O_2

O_1 - Pre test observation

O_2 - Post test observation

X - Intervention

3.3 VARIABLE

INDEPENDENT VARIABLE

An independent variable is the one that is believed to cause or influence dependent variable. It stands alone and does not depend on any other.(Polit DF, Hungler BP 1999).

In this study the independent variable is foot massage administered to neuro postoperative patients.

DEPENDENT VARIABLES

A dependent variable is the outcome variable of interest; the variable that is hypothesized to depend on or caused by another variable.

In this study dependent variable is the level of pain and anxiety of postoperative neuro surgery patients

DEMOGRAPHIC VARIABLES

Age, Sex, Habits, Hobbies, and family history of neuro disease

CLINICAL VARIABLES

clinical diagnosis, use of alternative therapy for pain reliving, duration of illness, and vital signs

3.4. STUDY SETTING

The study is conducted among the patients who are admitted in the post operative neurosurgical ward in government Rajaji hospital Madurai. At present the department of neurosurgery, Madurai medical college is second largest in Tamilnadu by man power and serving the poor people of whole south Ttamilnadu.

The department is working round the clock for 365 days a year doing tireless service to the society managing around 10000 patients involved in road traffic accidents, operating around 800 emergency cases and prevent about 400 deaths a year apart from that it is treating patient with other surgical condition such as brain tumor malignant and benign.

3.5. POPULATION

TARGETED POPULATION

The patient who are admitted in the neurosurgical ward in GRH.

STUDY POPULATION

The clients who are admitted in the neurosurgical ward after the surgery is been selected as study population.

3.6. SAMPLE SIZE

Totally 60 samples are used, 30 as experimental group and 30 samples as control group for the study.

3.7. SAMPLING TECHNIQUE

Samples are selected by purposive sampling technique from the neuro surgical ward.

3.8. CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA:

i. Patient who are willing to participate.
ii. Patients who have undergone craniotomy.
iii. Patients who are conscious and able to follow the verbal instruction.
iv. Patients whose pain scale scoring more than 3 and anxiety scoring more than 25.

EXCLUSION CRITERIA

i. Patient who are with foot ulcer or spinal injury or edema on the foot.
ii. Patient who are with cut or other open wound.
iii. Patient who are not able to understand Tamil or English

3.9. SELECTION AND DESCRIPTION OF TOOL

The tool is developed after extensive review of literature, internet search and discussion with the exports. In order to measure the effectiveness of foot massage on pain and anxiety among the neuro post operative patients , a structured questionnaire for demographic and clinical variables modified state anxiety scale and numerical pain scale is used for the study.

PART I (A) DEMOGRAPHIC VARIABLES

Demographic variables consist of 5 items Age, Sex, Habits, Hobbies, and family history of Neuro disease.

PARTI (B) THE CLINICAL VARIABLES

The clinical variables include 4 items Diagnosis, , ,the use of alternative therapies for pain. Vitals duration of the disease.

PART - II

The state trait anxiety inventory scale which was developed by spielberger's et al (1983) was used and modified for the research to assess the level of anxiety. It consists of 25 statements which was a self report inventory that focused the subjective feeling on anxiety.

All patients were encouraged to describe their feelings for assessing the state anxiety. The modified state anxiety consists of 25 statements that evaluate how the respondents felt " right now at that moment " It also might be used to evaluate how they felt at a particular time in the recent past and how they felt in a specific situation that was likely to be encountered in the future or a variety of hypothetical situation.

PART III

A 10 point horizontal numerical pain intensity scale was used to assess the degree of pain. It is standardized tool to assess pain. It has been widely used in many of the studies. It is recommended by Agency for Health care policy and Research (AMCPR – 1992) It consists of a straight line (1 to 10) representing the intensity of pain and has verbal description at each end. A person designates a point on the scale corresponding to their pain at the time of assessment. 0 no pain up to 6 is moderate pain more than 6to 10 is unbearable pain

3.10. SCORING PROCEDURE:

The state anxiety consists of 25 statements that evaluate how the respondents felt "right now at that moment" Each state anxiety inventory was given a weighted score of1to4.A rating of 4 for the statement 3,4,6,7,9,12,13,14,17,18,22,23,24,25.indicate high level anxiety. For the reversed statement of 1,2,5,8,10,11,15,16,19,21 rating of 4 indicates the absence of anxiety and it should be scored on reverse.

Based on the score from Mean +/- standard deviation formula, the subjects were classified as follows:

Low level of anxiety - 0 to 48

Moderate level of anxiety – 49 to 68

High level of anxiety – 69 to 100

3.11. TESTING OF THE TOOL

CONTENT VALIDITY

Content validity refers to the degree to which an instrument measures what it is supposed to measure. The content validity of the present tool along with the evaluation criteria checklist was submitted to 5 experts in the field of medical surgical nursing, surgery and clinical psychologist for their opinion on the items in the tool. There was

100% agreement by experts and minimal modifications were made in clinical and demographic variable based on the given suggestion.

RELIABILITY OF THE TOOL

After pilot study reliability of the tool was assessed by using split half method and inter rater method. Correlation coefficient are 0.81 and 0.85. These coefficient is very high and it is good tool for assessing the effectiveness of foot massage among post operative patients.

3.12. PILOT STUDY

Pilot study generally involves a small sample of subjects drawn from the same population as those from which the study sample will be drawn. The pilot study was conducted in the Govt. Rajaji hospital Madurai on 11.7.2011 to 17.7.2011.Prior to the pilot study, permission received from the ethical committee , head of the department of neuro surgery to conduct the pilot study .The pilot study is been conducted on 10 samples .first the researcher gave self introduction and established rapport with the participant. The nature of the study was explained to the participant and the verbal consent obtained from the participant.

3.13 .DATA COLLECTION PROCEDURE

Prior to data collection necessary permission received from the Dean, Principal, head of the department (Neuro surgery). The study is been approved by the ethical committee of Madurai medical college. Written consent obtained from the subject after introduction and explanation regarding the nature of the study.

The study was conducted for a period of 4 week from 1.10.2011 to 31.10.11. In the study process total 60 samples are collected the samples are selected from two separate ward in neuro surgical post operative department. The participants selected from 2nd post operative day. The samples in first fifteen day of study assigned as experimental group the second fifteen day assigned to control group. Pre test conducted for both the group prior to the intervention or observation. Pre test assessment done among the population in that patient with the anxiety more than 25 and pain sore 3 were included in the study.

After the pre test, intervention given for the experimental group the participants. The massage is been started for the participant from the 2nd post operative day for 4 consecutive day. Pretest and post test sore of pain and vitals are assed. Pre test anxiety is assessed before the first day of intervention and post test anxiety was assessed after the last day of intervention. In control group subjects were assessed during the 2nd post operative day for pain and anxiety subjects more than 3 in pain score and anxiety more than 25 included in the study. They received routine care. every day pretest done for vitals as routine procedure Post evaluation done after an hour of observation.post test for anxiety done after four days of observation.

INTERVENTION

Foot massage as a intervention is provided for 10 minutes on both the foot separately.(each foot 10 minutes) Before the procedure patient made into comfortable position .only one leg exposed at a time . A soft touch is provided to establish a contact .small stoke provided at the initially then long stork movements from the foot to the lateral position continued with rotation of the foot .winds up by massage to the foot. In the same way the other leg is exposed and repeated in the same process. Massage will be given once in a day. Time of massage provided on the convenience of the patient.

3.14 DATA ANALYSIS

Analysis of the data performed after collection of required data. The data are segregated into groups data sheet is prepared analysis done in the following way.

- Demographic variables in categories were given in frequencies with their percentages.
- Pain and anxiety score were given in mean and standard deviation.
- Pretest and posttest differences were calculated using paired t-test.
- Difference between experiment and control group was analyzed using independent t-test.
- Association between demographic variables and pain and anxiety score were analyzed using Pearson chi-square test/Yates corrected chi square test

- Simple bar diagram, Multiple bar diagram , percentage bar diagram and Pie diagram were used to represent the data .
- $P<0.05$ was considered statistically significant. All statistical test are two tailed test.

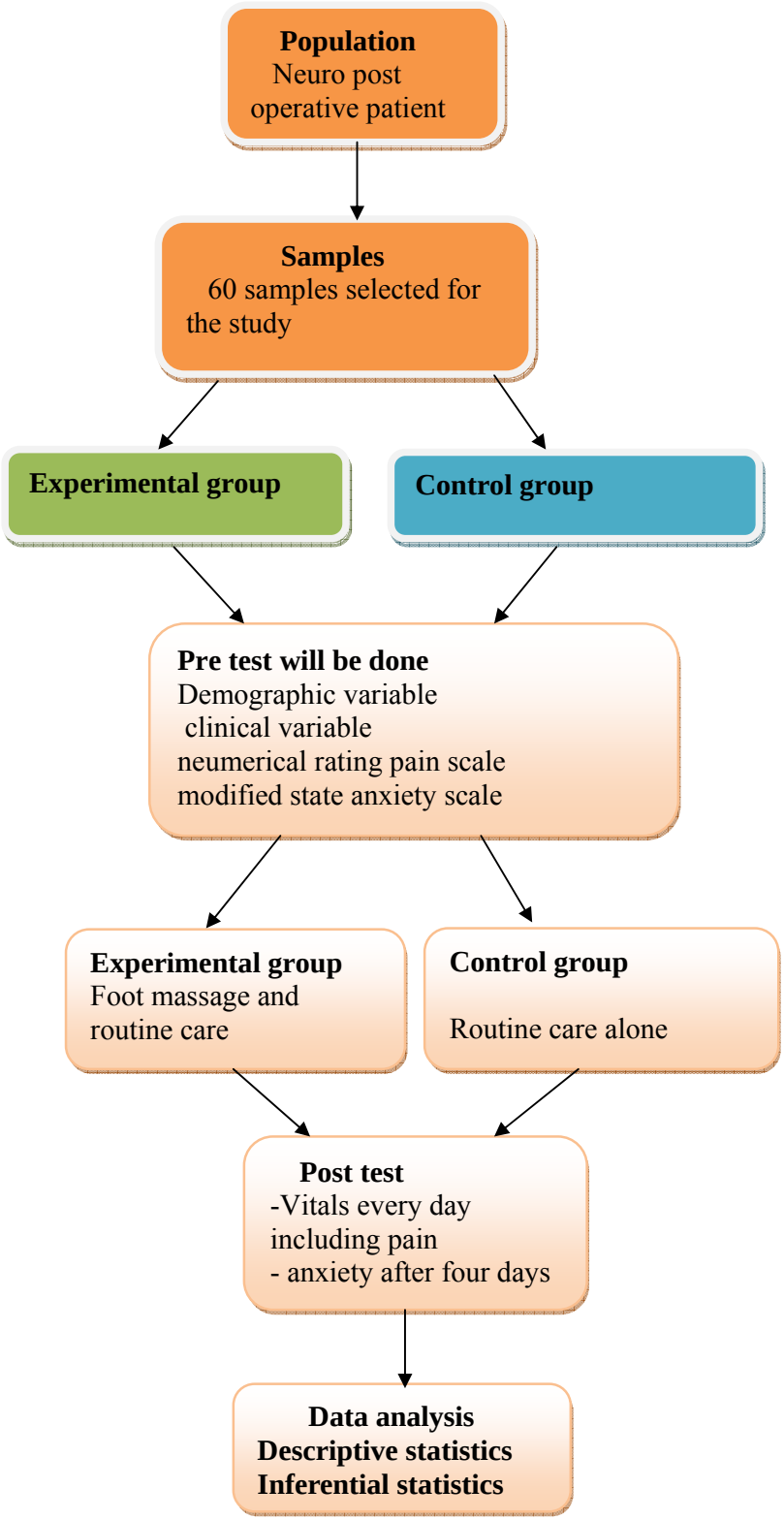
3.15. PROTECTION OF HUMAN RIGHTS

The study was conducted after receiving, approval from the ethical committee of Madurai medical college, Madurai.

WRITTEN CONSENT FORM

Due consent also obtained from the participant and assurance given to them that anonymity of each individual will be maintained.

(Fig.2) SCHEMATIC REPRESENTATION OF STUDY



CHAPTER IV

ANALYSIS AND INTERPRETATION

INTRODUCTION

This chapter presents the analysis and interpretation of the data collected to determine the impact of foot massage on the level of pain, among postoperative patients with neuro surgery in Government Rajaji Hospital Madurai.

The analysis of data involves the translation of the information collected during the course of the research project into interpretable, convenient and descriptive terms and to draw inferences from them using statistical methods. The purpose of analysis is to summarize, compare and test the proposed relationships and infer findings. The collected data was tabulated and analyzed using descriptive and inferential statistical in order to meet the objectives of the study, and to test the hypotheses.

ORGANISATION OF THE STUDY FINDINGS

The data collected from the postoperative neuro surgery patients are organized, analyzed and presented under the following headings:

Section I : Description of demographic variables of respondents

Section II : Description of clinical variables of respondents

Section III: Assessment of pain level of neuro postoperative patients.

Section IV: Assessment of anxiety level of neuro postoperative patients.

Section V: Comparison of the level of pain and anxiety with control and experimental group among the neuro postoperative patient.

Section VI: Association between post levels of pain and anxiety with selected demographic and clinical variables.

SECTION I

DESCRIPTION OF DEMOGRAPHIC VARIABLES OF RESPONDENTS

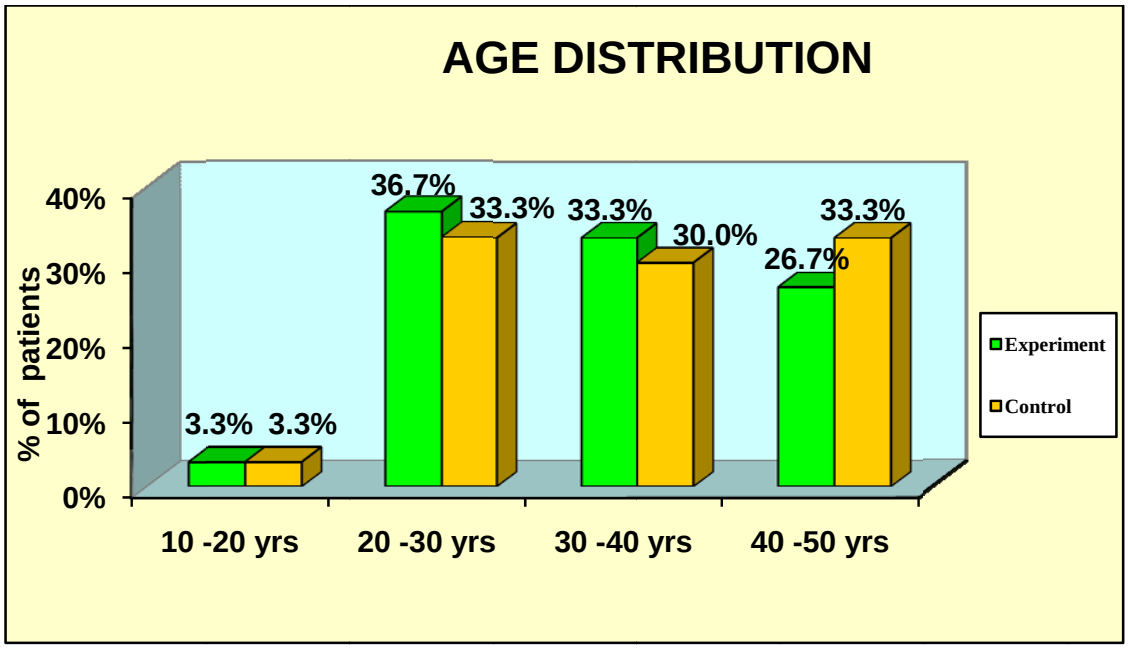
TABLE 1

DISTRIBUTION OF SUBJECTS ACCORDING TO THEIR DEMOGRAPHIC VARIABLES

		group			
		Experiment		Control	
		n	%	n	%
Age	10 -20 yrs	1	3.3%	1	3.3%
	20 -30 yrs	11	36.7%	10	33.3%
	30 -40 yrs	10	33.3%	9	30.0%
	40 -50 yrs	8	26.7%	10	33.3%
Sex	Male	17	56.7%	16	53.3%
	Female	13	43.3%	14	46.7%
Habits	Alcohol	3	10.0%	4	13.3%
	Tobacco	6	20.0%	10	33.3%
	Betal chewing	8	26.7%	4	13.3%
	No habits	13	43.3%	12	40.0%
Hobbies	Watching tV	17	56.7%	13	43.3%
	Listening music	8	26.7%	10	33.3%
	Reading books	3	10.0%	4	13.3%
	Others	2	6.7%	3	10.0%
Family history	Yes	1	3%	3	10.0%
	No	29	93	27	90.0%

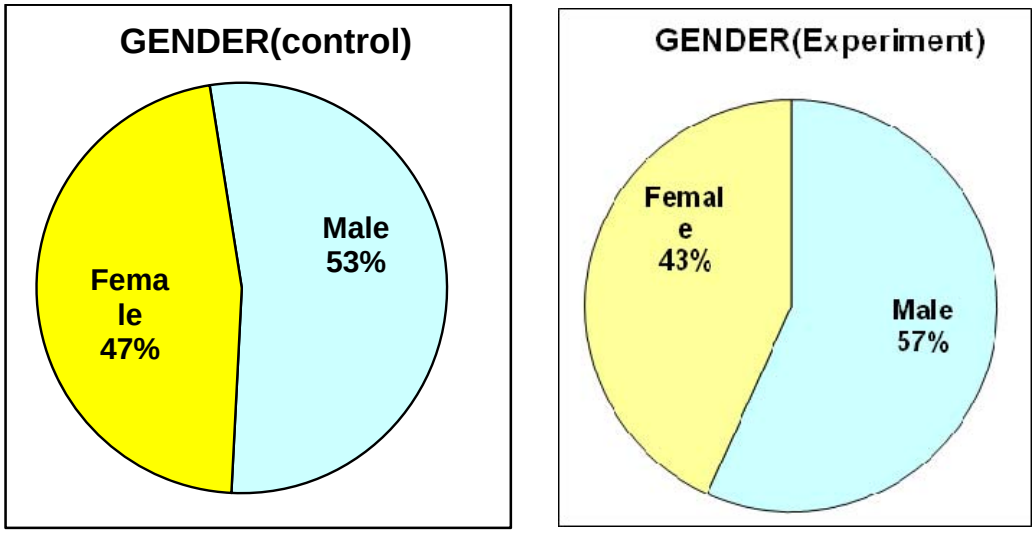
DEMOGRAPHIC VARIABLE

The table I describe the demographic profile of the experimental and control group. In the age wise distribution totally 2 person come less than the year of 20. In the habits of taking alcohol, tobacco, betel chewing and other habits more than 80% of the patients is both the group are belongs to the habit of taking any one of the above said habit. In is the hobbies almost 90% of the total population of the study in interested in watching the movie.



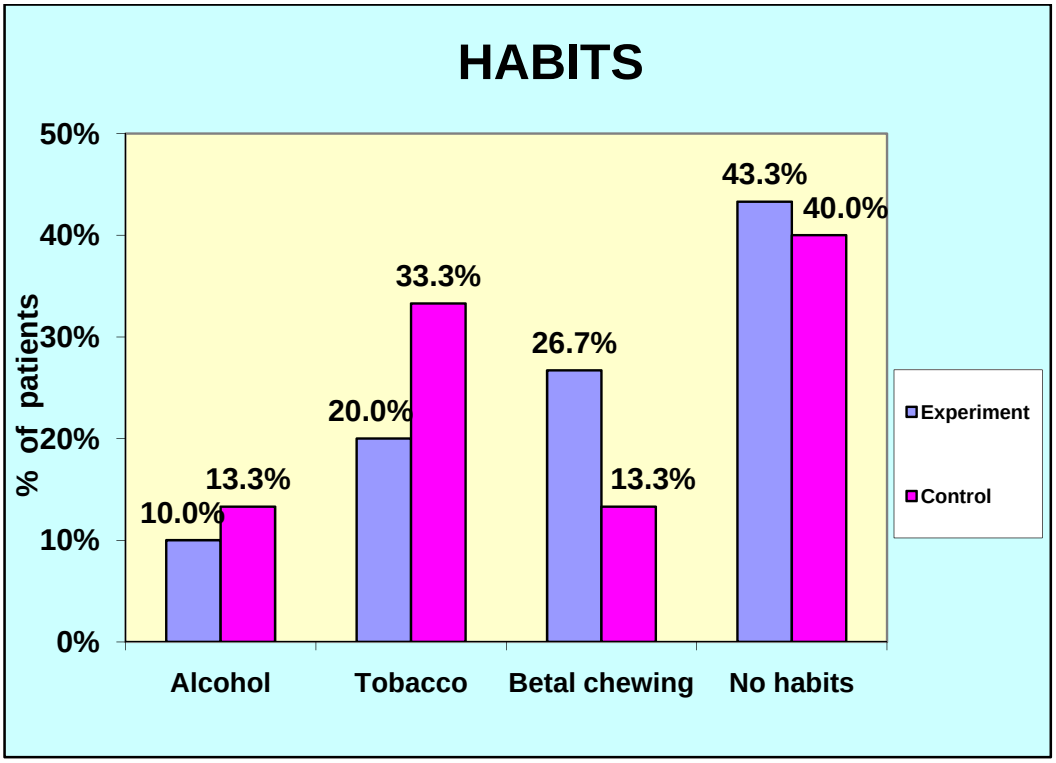
(Fig.3) DISTRIBUTION OF SUBJECTS ACCORDING TO THEIR AGES

The above figure discribe the distribution of subjects according to their ages. In the age wise distribution the experimental and control group are equally distributed at the age of 20-10 that is 3.3% .only at the age of 40-50 shows a wide difference between the experimental and control group that is 26.7% in experimental group and 33.3% in control group.



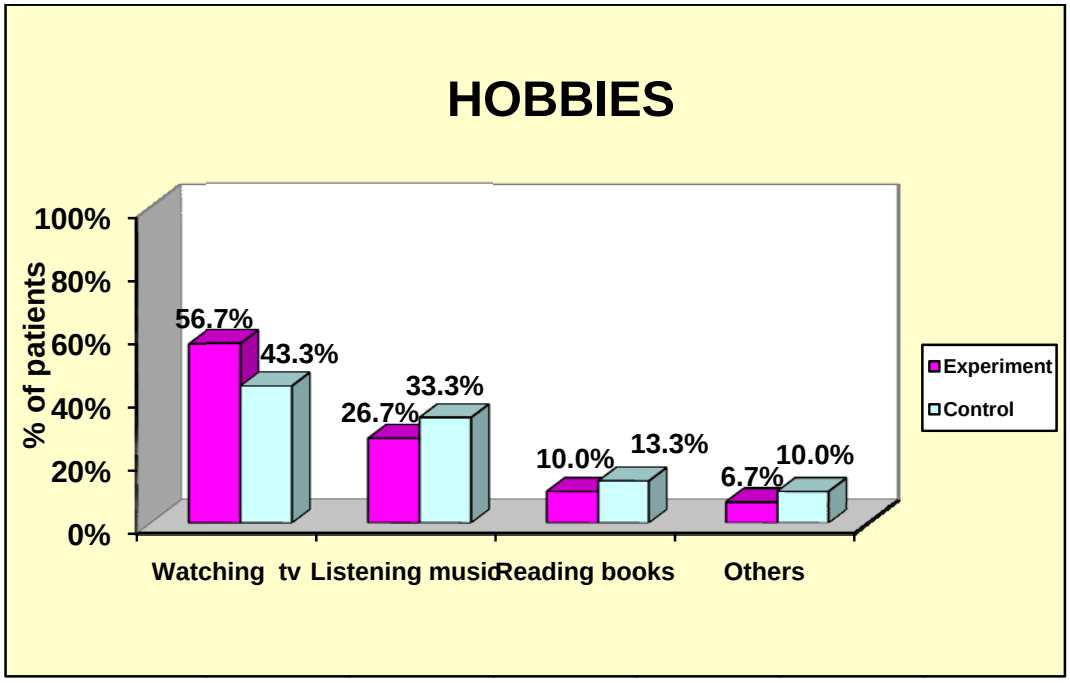
(fig. 4) DISTRIBUTION OF SUBJECTS ACCORDING TO THEIR SEX

The above pie diagram enumerate the distribution of subjects according to their sex. In the study both sex were included .In control and experimental groupmales are higher in propotion than females.that is 57% in experimental and 53% in control group.



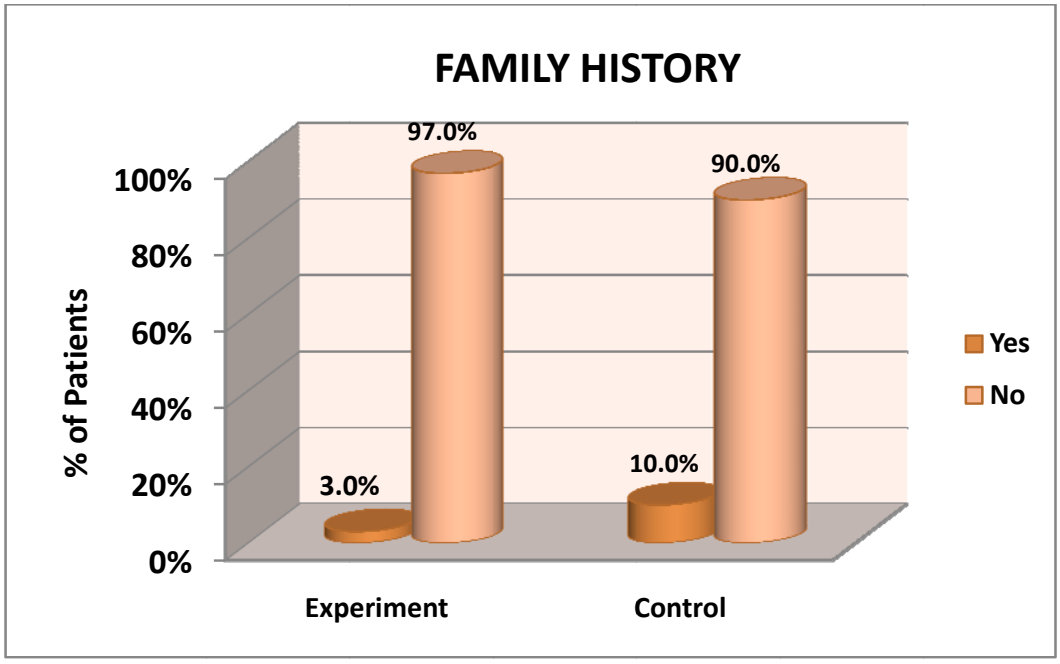
(Fig. 5) DISTRIBUTION OF HABITS AMONG THE SUBJECTS

The above bar diagram explain the distribution of habits among the subjects On describing the habits of respondent most of them having the habit of betal chewing and tobacco .nearly half of the respondant in both the group are not having any habit of betal chewing alcohol and tobacho. The% is in experimental with 43.3% and in control group with 40.0%.



(Fig.6) DISTRIBUTION OF HOBBIES AMONG THE SUBJECTS

Fig 6 shows the distribution of hobbies among the population most of the population.most of the people intersted in watcing tv that is 56.7% and 43.3% least amount10%and 13.3% of the people interested in reading book.some other hobbies like garedening cooking is also been enjoyed by some other people.



(Fig.7) DISTRIBUTION OF FAMILY HISTORY OF NEURO DISEASE AMONG THE POPULATION

Fig7 describes about the history of neurodisease among the respondant. In that only 4 person in the total population of 60 have the history of disease. In that the history among the control group is higher that is 10% than the experimental group that is 3%.

Section II

DESCRIPTION OF CLINICAL VARIABLES OF RESPONDENTS

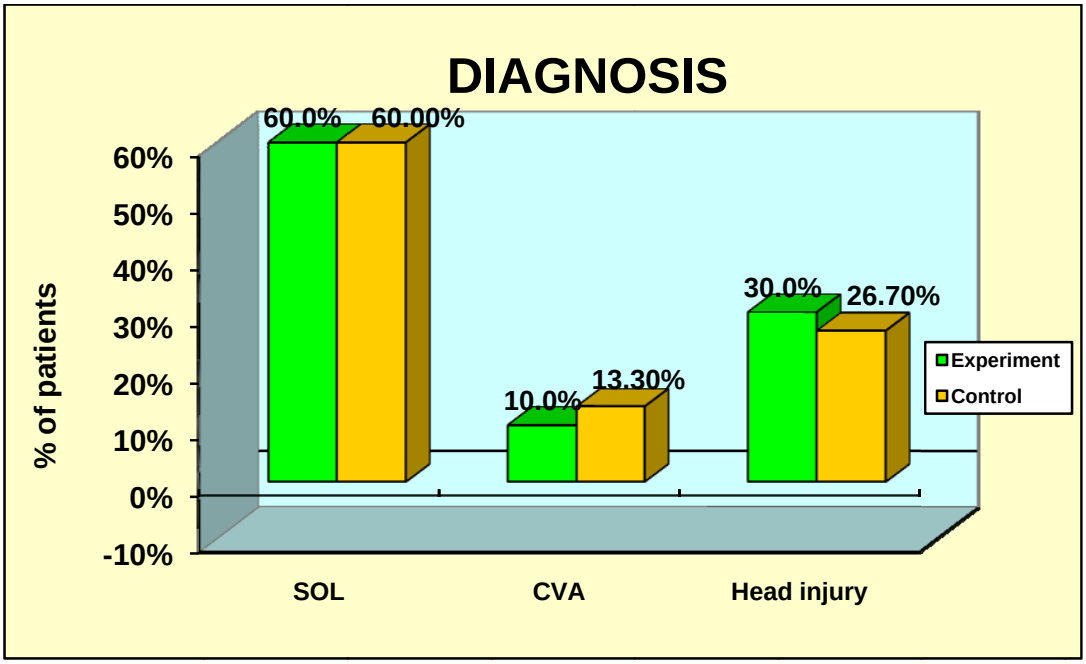
Table 2

DISTRIBUTION OF SUBJECTS ACCORDING TO THEIR CLINICAL VARIABLES

		group			
		Experiment		Control	
		n	%	n	%
Diagnosis	SOL	18	60.0%	18	60.0%
	CVA	3	10.0%	4	13.3%
	Head injury	9	30.0%	8	26.7%
Alternative pain relieve	Balm	13	56.5%	10	33.3%
	Massage	3	13.0%	7	23.3%
	Oil	2	8.7%	3	10.0%
	Others	5	21.7%	10	33.3%
Duration of illness	< 1 yr	16	53.3%	11	36.7%
	1 -3 yrs	8	26.7%	7	23.3%
	3 -5 yrs	3	10.0%	7	23.3%
	5 -7 yrs	2	6.7%	3	10.0%
	>7 yrs	1	3.3%	2	6.7%

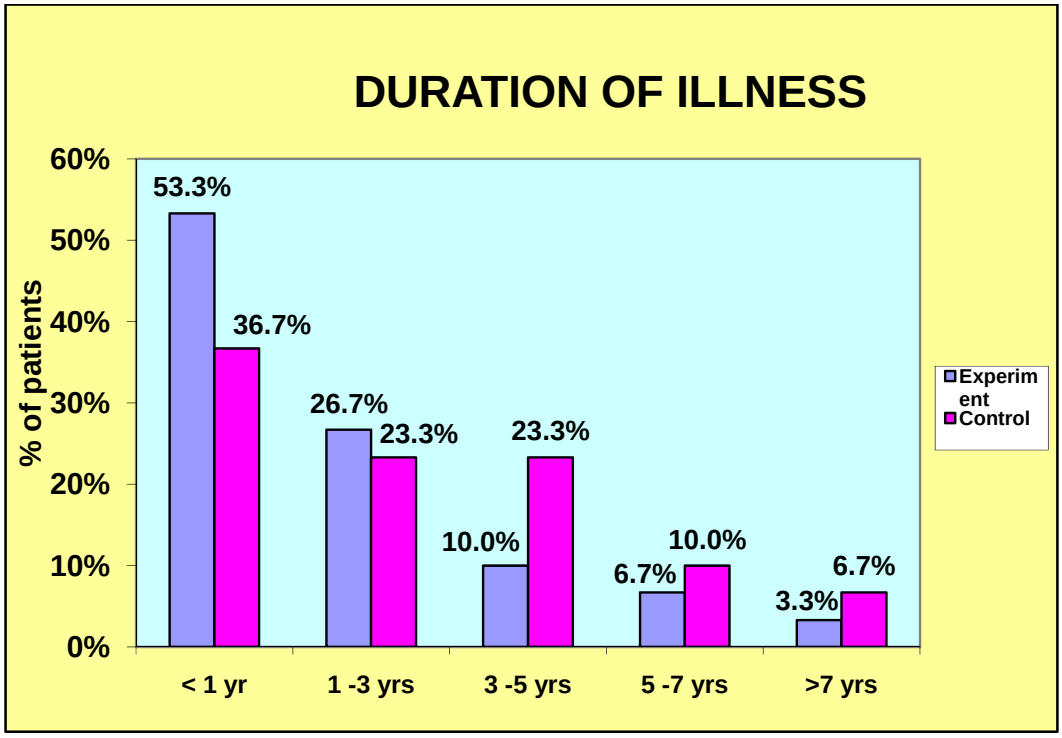
CLINICAL VARIABLES

Table No. 2 shows the disease information of patients those who are participated in this study In the disease factor in both the group about 60% of the population is affected with the next reason for admission into the post operative area is with head injury and the cerebrovascular accident occupy the last position is the disease factor. There is no significant difference in the pretest and post test vials of control and experimental group. Description about the level of pain in the neuro post operative patient.



(Fig.8) DISTRIBUTION OF CLINICAL DIAGNOSIS AMONG THE POPULATION

The fig 8 describe the clinical diagnosis among the population in this description the leading cause of hospitalization among the population is space occupying lesion60%and60% .and the next factor is head injury in control group 26.7% and in experimental 30.0% . All most both experimental and control group have equal distribution of diagnosis.



(Fig.9) DISTRIBUTION ABOUT THE DURATION OF ILLNESS AMONG THE SUBJECTS

Fig 9 discribe about the duration of ilness among the respondent. Inexperimental group most of the people 53.3% have the duration of disease less than one year .the control group they fall in to the category of 1 to 5 years at the maximum propotion.

Table 3

COMPARISON OF VITAL SIGNS BETWEEN IN THE CONTROL AND EXPERIMENTAL GROUP PRE TEST AND POST TEST LEVEL

		group				Student t-test
		Experiment		Control		
		Mean	SD	Mean	SD	
Pretest	Temperature	98.04	1.39	97.70	1.14	t=1.03 P=0.31 DF= 58 not significant
	Pulse	82.87	14.25	82.00	8.66	t=0.28 P=0.77 DF= 58 not significant
	Respiration	23.40	18.67	20.07	3.34	t=0.96 P=0.34 DF= 58 not significant
	SBP	110.33	16.50	109.33	13.11	t=0.26 P=0.76 DF= 58 not significant
	DBP	67.93	13.59	66.67	11.84	t=0.38 P=0.70 DF= 58 not significant
Posttest	Temperature	97.65	1.97	97.84	.83	t=0.49 P=0.62 DF= 58 not significant
	Pulse	81.33	14.59	81.27	8.08	t=0.02 P=0.98 DF= 58 not significant
	Respiration	26.53	36.74	19.97	2.61	t=0.97 P=0.33 DF= 58 not significant
	SBP	102.33	14.40	111.67	9.50	t=1.05 P=0.29 DF= 58 not significant
	DBP	67.67	10.40	70.00	10.83	t=0.85 P=0.39 DF= 58 not significant

The above table describe a comparison of vital signs between in the control and experimental group pre test and post test level. On comparing the vital signs it does not show any significant difference between the experimental and control group. where as the systolic blood pressure mean in the experimental group falls from 110.33 to 102.33.but the value is not statistically significant

Section III

ASSESSMENT OF PAIN LEVEL OF NEURO POSTOPERATIVE PATIENTS

Table 4

PRETEST PAIN SCORE IN NEURO POST OPERATIVE PATIENTS

	No. of patients	Min- max pain score	Mean±SD	% of pain
Experiment	30	0 -10	6.37 ± 1.16	63.7%
Control	30	0 -10	6.30 ± 1.09	63.0%

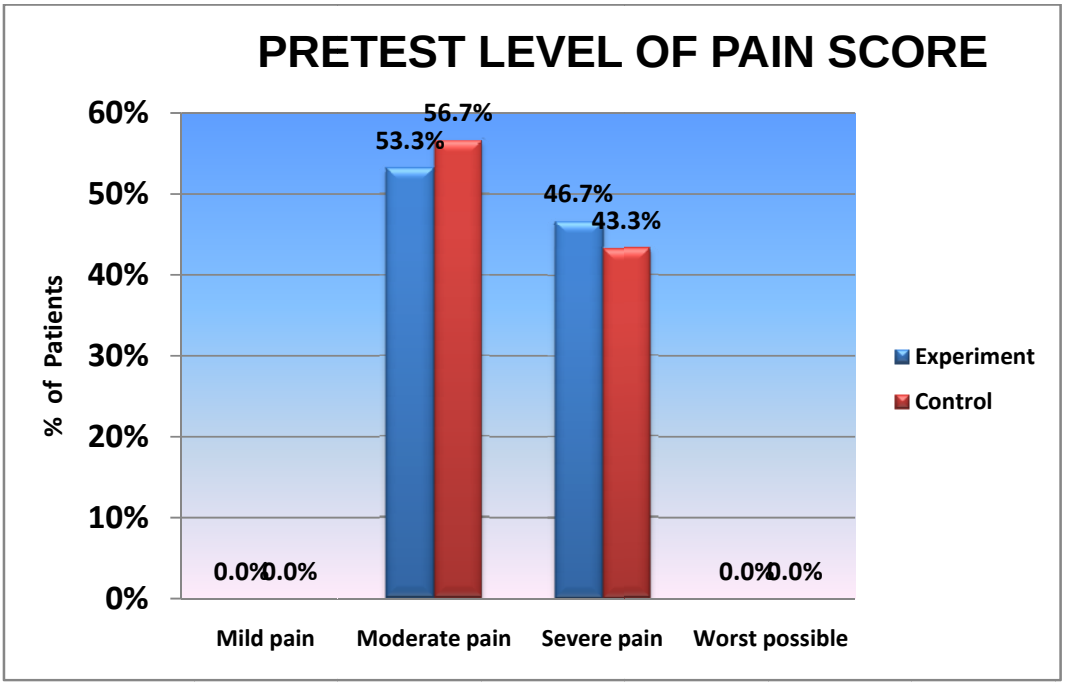
Table no 4 shows the mean pain score among patients before foot massage .On an average, 6.37 pain score out of 10 in experiment group .On an average, 6.30 pain score out of 10 in control group. Or we can say , pain score is 63.7 in experiment patients and it is 63.0% in control group.

Table 5

PRETEST LEVEL OF PAIN SCORE

Level of pain	Experiment		Control	
	n	%	n	%
No pain	0	0.0%	0	0.0%
Mild	0	0.0%	0	0.0%
Moderate	16	53.3%	17	56.7%
Severe	14	46.7%	13	43.3%
Total	30	100.0%	30	100.0%

Table no.5 shows the pretest level of pain among post operative patients. Before massage , in experiment group 53.3% of patients are having moderate pain, 46.7% of them having severe pain. Before massage , in control group 56.7% of patients are having moderate pain, 43.3% of them having severe pain.



(Fig 10) PRE TEST LEVEL OF PAIN SCORE

The above figure describe the pre test level of pain among the neuro post operative patients .before massage both the group having moderate to severe level of pain in experimental group it is about 53.3% in moderate pain and in control 56.7% in moderate pain.

The scores will be interpreted as follows:

None	:	0
Mild	:	1 - 3
Moderate	:	4 – 6
Severe	:	7 – 8
Worst Possible	:	9-10

SECTION IV

ASSESSMENT OF ANXIETY LEVEL OF NEURO POSTOPERATIVE PATIENTS

Table 6

PRETEST ANXIETY SCORE IN NEURO POST OPERATIVE PATIENTS

	No. of subjects	Min- max anxiety score	Mean±SD	% of pain
Experiment	25	25 -100	59.43 ± 6.87	59.4%
Control	25	25 -100	58.37 ± 5.59	58.4%

Table no 6 shows the mean anxiety score among patients before foot massage . On an average, 59.43 anxiety score out of 100 in experiment group .On an average, 58.37 anxiety score out of 100 in control group. Or we can say , anxiety score is 59.4 % in experiment patients and it is 58.4% in control group.

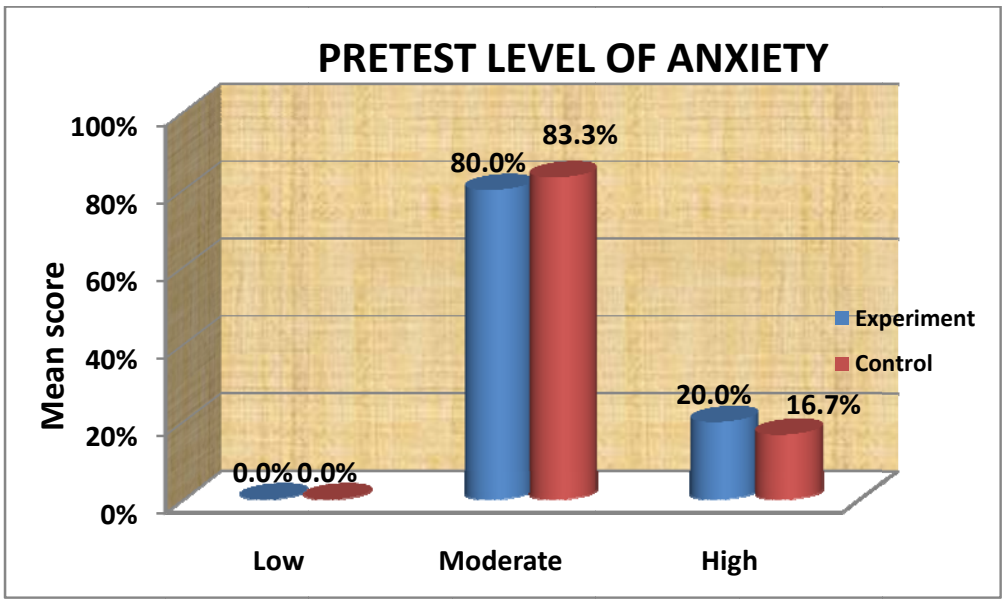
Table 7

PRETEST LEVEL OF ANXIETY SCORE IN NEURO POST OPERATIVE PATIENTS

Level of anxiety	Experiment		Control	
	n	%	n	%
Low	0	0.0%	0	0.0%
Moderate	24	80.0%	25	83.3%
High	6	20.0%	5	16.7%
Total	30	100.0%	30	100.0%

Table no.7 shows the pretest level of anxiety among post operative patients.

Before massage, in experiment group 80% of patients are having moderate anxiety, 20.0% of them having high anxiety Before massage , in control group 83.37% of patients are having moderate anxiety, 16.7% of them having high anxiety



(Fig.11) PRE TEST LEVEL OF ANXIETY

The above figure describe the pre test level of anxiety among the subjects most of the patient in experimental and control group fall into the category of moderate level of anxiety that is in experimental it is 80.00% and in control it is 83.3%. in the high level of anxiety 20.0% from experimental and 16.7% from control group fall into the catogary.

Low level of anxiety - 0 to 48

Moderate level of anxiety – 49 to 68

High level of anxiety – 69 to 100

SECTION V

COMPARISON OF THE LEVEL OF PAIN AND ANXITY WITH CONTROL AND EXPERIMENTAL GROUP AMONG THE NEURO POSTOPERATIVE PATIENT

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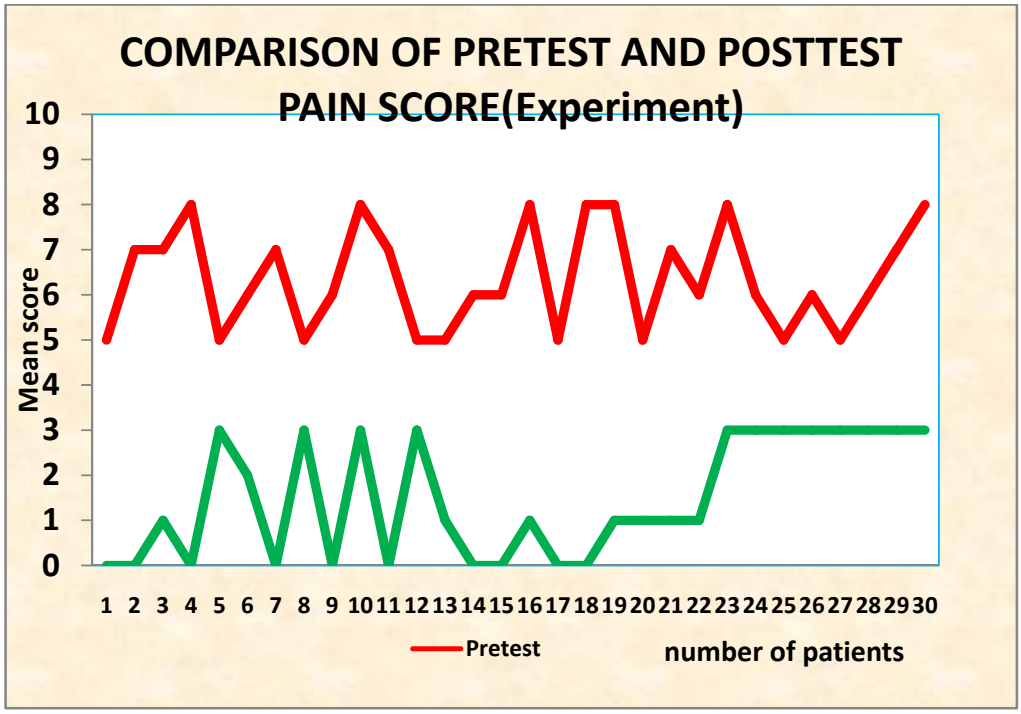
Table 8

COMPARISON OF EXPERIMENT AND CONTROL GROUP PAIN SCORE

		Max score	Mean score	Mean Difference in pain score with 95% Confidence interval	Percentage Difference in pain score with 95% Confidence interval
Experiment	Pretest	10	6.37	5.37(4.73 – 6.01)	53.7%(47.3% – 60.1%)
	Posttest	10	1.00		
Control	Pretest	10	6.30	3.67(3.16 – 4.17)	36.7%(31.6% – 41.7%)
	Posttest	10	2.63		

Table no 8 shows comparison of experiment and control group pain score of foot massage between experiment and control group On an average, in experiment, patients are reduced 53.7% of pain score whereas in control patients are reduced 36.7% pain score. Differences between pretest and posttest score was calculated using and mean difference with 95% Class interval and proportion with 95% Class interval.



(Fig. 12) COMPARISON OF PRETEST AND POST TEST PAIN SCORE EXPERIMENTAL GROUP

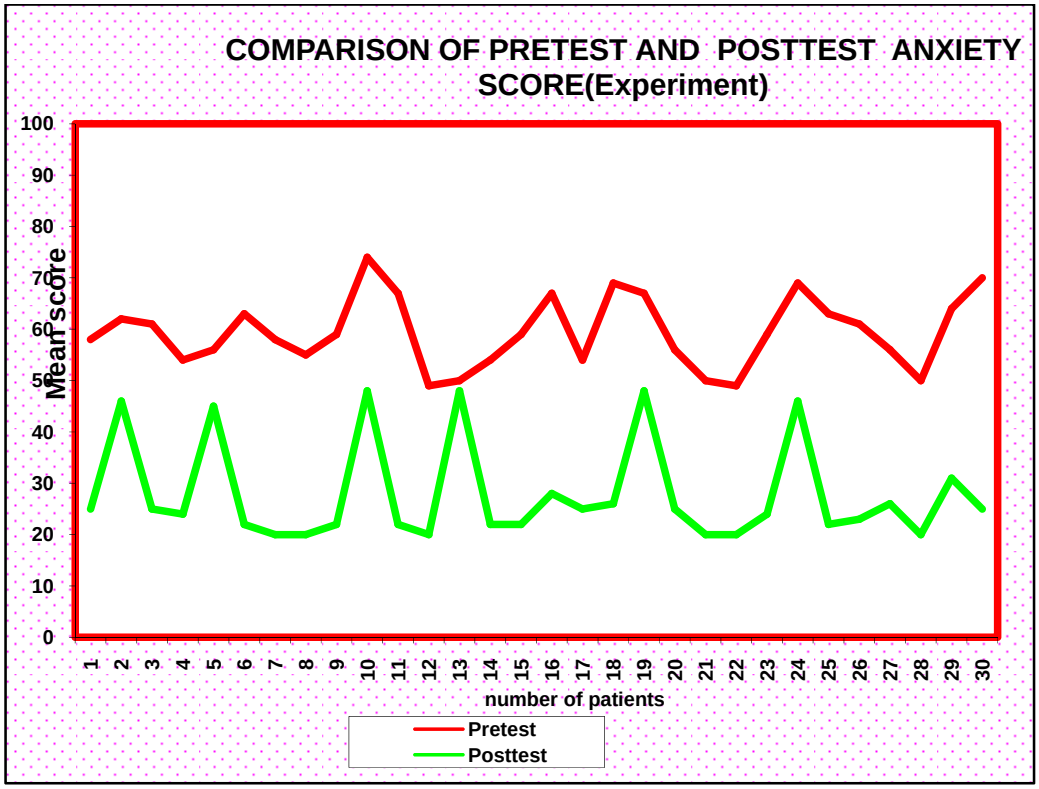
In posttest, experiment patients are having 1.00 pain score and control group patients are having 2.63 pain score. The difference is 1.63 pain score. Difference is large. This difference is statistically significant. Statistical significance was calculated by using student's independent 't' test.

Table 9

COMPARISON OF EXPERIMENT AND CONTROL GROUP ANXIETY SCORE

		Max score	Mean score	Mean Difference in pain score with 95% Confidence interval	Percentage Difference in pain score with 95% Confidence interval
Experiment	Pretest	100	59.43	31.43(27.80 – 35.07)	31.43%(27.80% – 35.07%)
	Posttest	100	28.00		
Control	Pretest	100	58.37	19.47(16.14 – 22.80)	19.47%(16.14 %– 22.80%)
	Post test	100	38.90		

Table no 9 shows the comparison of experiment and control group anxiety score On an average, in experiment, patients are reduced 31.43% of anxiety score whereas in control patients are reduced 19.47% anxiety score. Differences between pretest and posttest score was calculated using and mean difference with 95% Class interval and proportion with 95% class interval.



(Fig.13) COMPARISON OF PRE TEST POST ANXIETY SCORE EXPERIMENTAL GROUP

In experiment group, patients are reduced their anxiety score from 59.43 to 28.00 after the administration of massage. Due to foot massage they are able to reduce 31.43 anxiety score from base line anxiety. This reduction is statistically significant. Statistical significance was calculated by using student's paired 't' test.

Table 10

COMPARISON OF EXPERIMENTAL AND CONTROL PRETEST LEVEL OF PAIN

	Experiment		Control		Chisquare test /Yates corrected chi square test
	No.of subjects	%	No.of subjects	%	
No pain	0	0.0%	0	0.0%	$\chi 2$=0.07 P=0.79 DF=2 not significant
Mild	0	0.0%	0	0.0%	
Moderate	16	53.3%	17	56.7%	
Severe	14	46.7%	13	43.3%	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001.

Table no.10 shows the pretest level of pain among post operative patients. Before massage, in experiment group 53.3% of patients are having moderate pain, 46.7% of them having severe pain. Before massage , in control group 56.7% of patients are having moderate pain, 43.3% of them having severe pain. There is no statistically significant difference. Pearson Chisquare test /Yates corrected chi square test was used to test statistical significance.

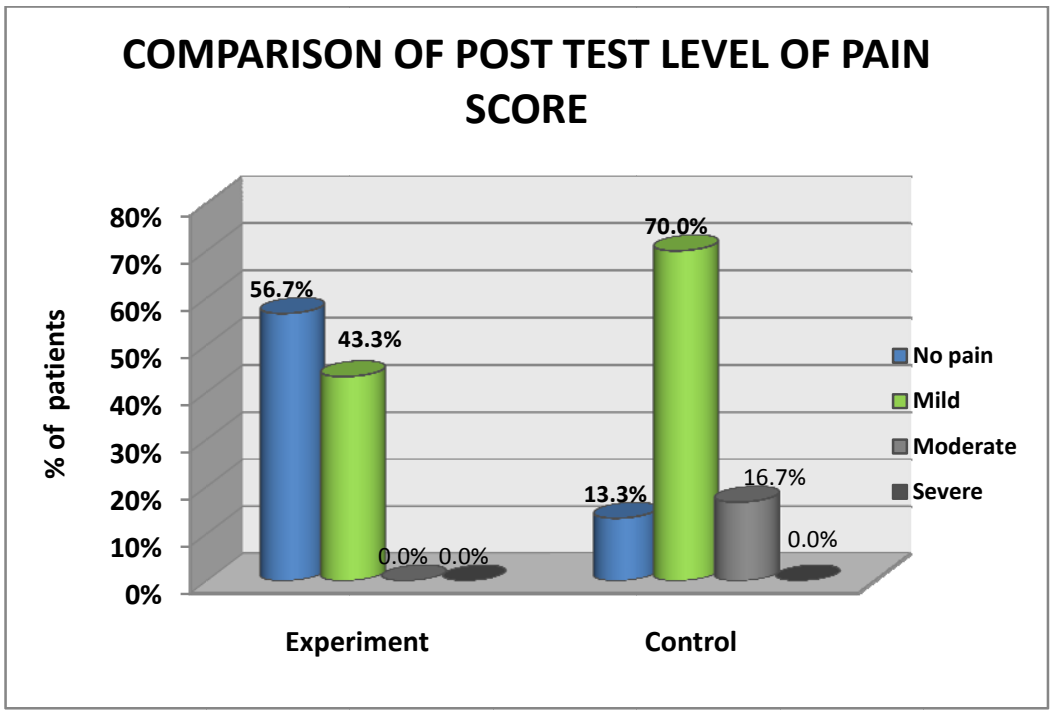
Table 11

COMPARISON OF EXPERIMENTAL AND CONTROL POSTTEST LEVEL OF PAIN

	Experiment		Control		Chisquare test /Yates corrected chi square test
	No.of subjects	%	No.of subjects	%	
No pain	17	56.7%	4	13.3%	$\chi 2$=14.92 P=0.001*** DF=2 significant
Mild	13	43.3%	21	70.0%	
Moderate	0	0.0%	5	16.7%	
Severe	0	0.0%	0	0.0%	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.00.

Table no.11 shows the posttest level of pain among post operative patients. In posttest, experiment patients are having 28.00 anxiety score and control group patients are having 38.90 anxiety score. The difference is 10.90 anxiety score. Difference is large. This difference is statistically significant. Statistical significance was calculated by using student's independent 't' test.



(Fig.14) COMPARISON OF POST TEST LEVEL OF PAIN BETWEEN THE EXPERIMENTAL AND CONTROL GROUP

The above figure describe After massage , in experiment group 56.7% of patients are having no pain, 43.3% of them having mild pain. In posttest , in control group 13.3% of patients are having no pain, 70% of them having mild pain and 16.7% moderate pain. There is statistically significant difference. Pearson Chisquare test/Yates corrected chi square test was used to test statistical significance

Table 12

COMPARISON OF EXPERIMENT AND CONTROL LEVEL OF PRETEST ANXIETY

	Experiment		Control		Chisquare test /Yates corrected chi square test
	No.of subjects	%	No.of subjects	%	
Low	0	0.0%	0	0.0%	$\chi 2=0.11$ P=0.73
Moderate	24	80.0%	25	83.3%	DF=1 not significant
High	6	20.0%	5	16.7%	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.00.

Table no.12 shows the pretest level of anxiety among experimental and control group. Before massage, in experiment group 80.0% of patients are having moderate anxiety, 20.0% of them having high anxiety. Before massage, in control group 83.3% of patients are having moderate anxiety, 16.7% of them having high anxiety. There is no statistically significant difference. Pearson Chisquare test /Yates corrected chi square test was used to test statistical significance

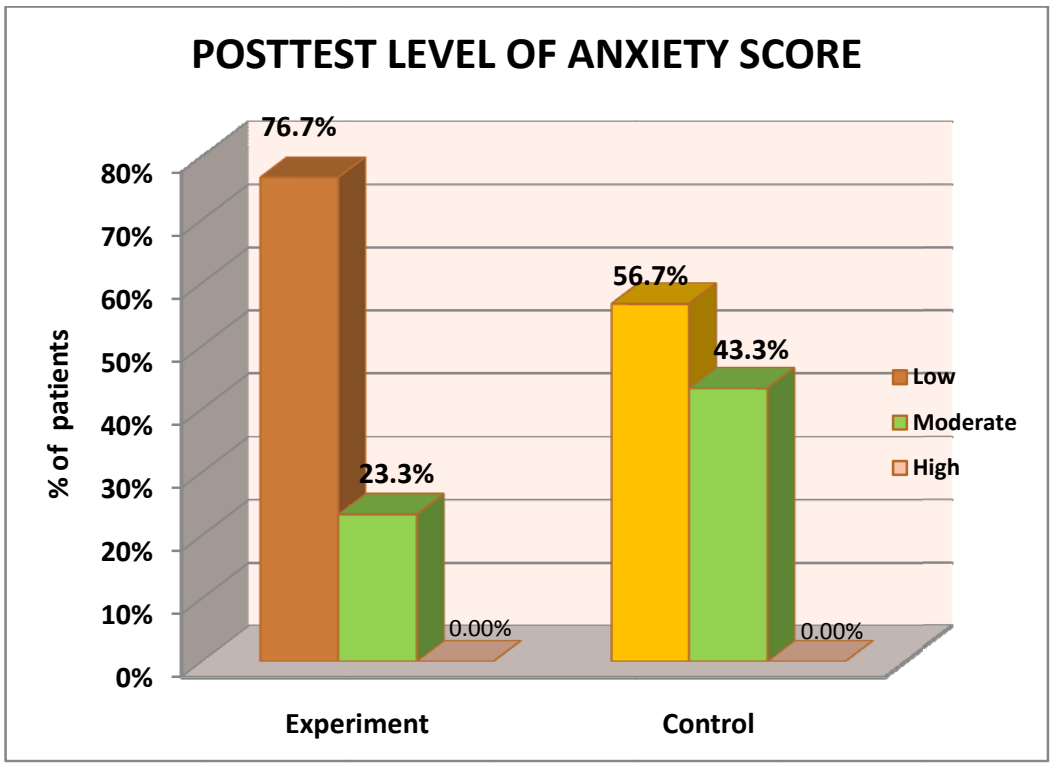
Table 13

COMPARISON OF EXPERIMENT AND CONTROL LEVEL OF POSTTEST ANXIETY

	Experiment		Control		Chisquare test /Yates corrected chi square test
	No.of subjects	%	No.of subjects	%	
Low	23	76.7%	17	56.7%	$\chi 2=3.84$ P=0.05*
Moderate	7	23.3%	13	43.3%	DF=1 significant
High	0	0.0%	0	0.0%	

significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001.

The above table compare the post anxiety score of experiment and control group. On comparing in the experimental and control group anxiety level falls into the low and moderate level of anxiety. In experimental group 23of them that is 76.7 % lie on low level anxiety. Where in control group it is 56.7% falls into low level anxiety.



(Fig.15) POST TEST LEVEL OF ANXIETY SCORE AMONG THE EXPERIMENTAL AND CONTROL GROUP

The above fig shows the pretest level of anxiety among post operative patients. After massage, in experiment group 76.7% of patients are having low anxiety, 23.3% of them having moderate anxiety. After massage, in control group 56.7% of patients are having low anxiety, 43.3% of them having moderate anxiety. There is a statistically significant difference. Pearson Chi-square test/Yates corrected chi square test was used to test statistical significance.

Table 14

EFFECTIVENESS OF FOOT MASSAGE (Pain score)

	Experiment	Control	Student's independent t-test
Pretest	6.37 ± 1.16	6.30 ± 1.08	t=0.23 P=0.81 DF= 58 not significant
Posttest	1.00± 1.28	2.63± 1.61	**t=4.34 P=0.001*** DF= 58 significant**
Student's paired t-test	**t=17.84 P=0.001*** DF= 29 significant**	**t=11.64 P=0.001*** DF= 29 significant**	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.00.

In experiment group, patients are reduced their pain score from 6.37 to 1.00 after the administration of massage. Due to foot massage they are able to reduce 5.37 pain score from base line pain. This reduction is statistically significant. Statistical significance was calculated by using student's paired 't' test.

In control group, patients are reduced their pain score from 6.30 to 2.63 after the posttest. Due to routine care they are able to reduce 3.67 pain score from base line pain. This reduction is statistically significant. Statistical significance was calculated by using student's paired 't' test.

In posttest, experiment patients are having 1.00 pain score and control group patients are having 2.63 pain score. The difference is 1.63 pain score. Difference is large. This difference is statistically significant. Statistical significance was calculated by using student's independent 't' test.

Table 15

EFFECTIVENESS OF FOOT MASSAGE (Anxiety score)

	Experiment	Control	Student's independent t-test
Pretest	59.43 ± 6.87	58.37 ±5.59	t=0.65 P=0.51 DF= 58 not significant
Posttest	28.00± 9.92	38.90±9.49	**t=4.34 P=0.001*** DF= 58 significant**
Student's paired t-test	**t=17.65 P=0.001*** DF= 29 significant**	**t=11.96 P=0.001*** DF= 29 significant**	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001.

In pretest, experiment patients are having 59.37 anxiety score and control group patients are having 58.37 anxiety score. The difference is 1.00 anxiety score. It is small difference. This difference is statistically not significant. Statistical significance was calculated by using student's independent 't' test.

In posttest, experiment patients are having 28.00 anxiety score and control group patients are having 38.90 anxiety score. The difference is 10.90 anxiety score. Difference is large. This difference is statistically significant. Statistical significance was calculated by using student's independent 't' test.

In experiment group, patients are reduced their anxiety score from 59.43 to 28.00 after the administration of massage. Due to foot massage they are able to reduce 31.43 anxiety score from base line anxiety. This reduction is statistically significant. Statistical significance was calculated by using student's paired 't' test.

In control group, patients are reduced their anxiety score from 58.37to 38.90after the posttest. Due to routine care they are able to reduce 19.47 anxiety score from base line anxiety. This reduction is statistically significant. Statistical significance was calculated by using student's paired 't' test.

Table 16

COMPARISON OF DAYWISE PAIN SCORE

		group				
		Experiment		Control		
		Mean	SD	Mean	SD	Student independent t-test
Pretest	day1	5.37	1.16	5.30	1.09	t=0.23 P=0.82 DF= 58 not significant
	day2	3.63	.96	4.13	1.38	t=1.62 P=0.11 DF= 58 not significant
	day3	2.10	.96	3.43	1.10	t=4.99 P=0.001*** DF= 58 significant
	day4	.73	.58	2.27	1.14	t=6.54 P=0.001*** DF= 58 significant
Posttest	day1	4.43	1.25	5.03	1.13	t=1.90 P=0.07 DF= 58 not significant
	day2	2.77	.94	3.93	1.23	t=4.13 P=0.001*** DF= 58 significant
	day3	1.37	.72	3.07	1.20	t=6.65 P=0.001*** DF= 58 significant
	day4	.17	.38	2.13	1.20	t=8.53 P=0.001*** DF= 58 significant

The above table compare the effect of foot massage on the level of pain as day wise. It is showing that the effect of foot massage on pain reduction start from the 2nd day onwards. The p value of 2nd day is 0.001.

SECTION VI

ASSOCIATION BETWEEN POST LEVELS OF PAIN AND ANXIETY WITH SELECTED DEMOGRAPHIC AND CLINICAL VARIABLES

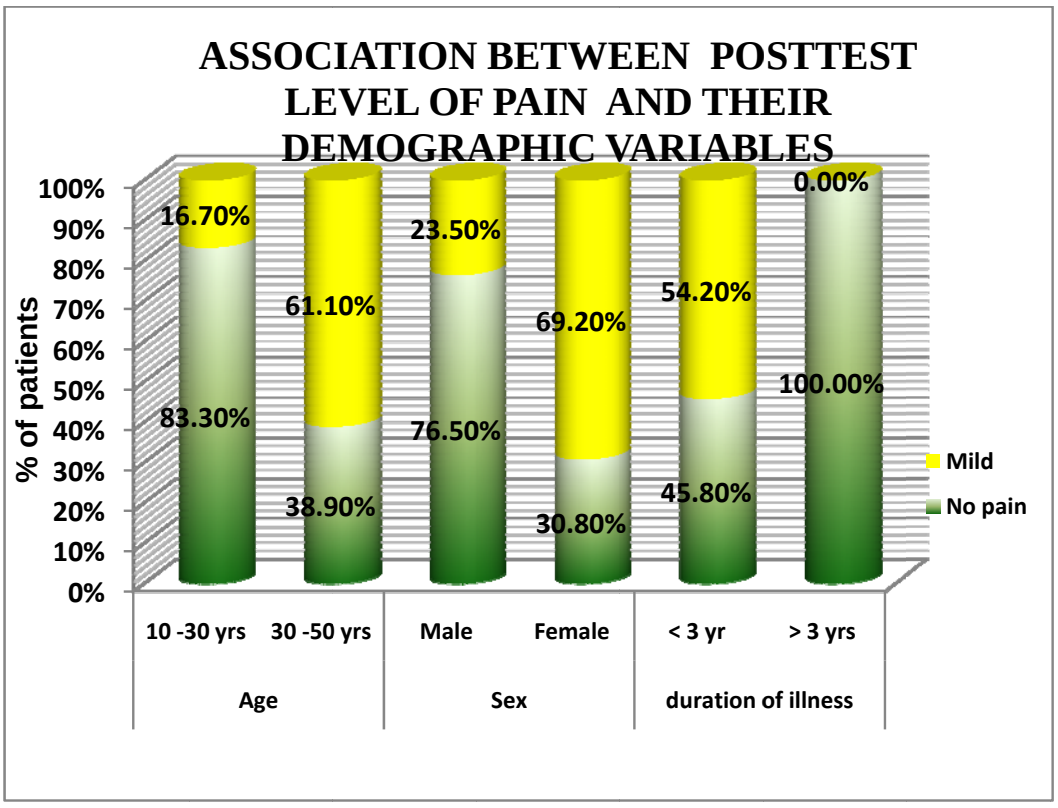
Table 17

ASSOCIATION BETWEEN POSTTEST LEVEL OF PAIN AND DEMOGRAPHIC VARIABLES (Experiment group)

		LEVEL OF PAIN				Total	Chisquare test */Yates corrected chi square test*
		No pain		Mild			
		n	%	n	%		
Age	10 -30 yrs	10	83.3%	2	16.7%	12	**χ2=5.79 P=0.02***
	30 -50 yrs	7	38.9%	11	61.1%	18	**DF=1 significant**
Sex	Male	13	76.5%	4	23.5%	17	**χ2=6.26 P=0.01****
	Female	4	30.8%	9	69.2%	13	**DF=1 significant**
Habits	Yes	8	47.1%	9	52.9%	17	χ2=1.47 P=0.22
	No	9	69.2%	4	30.8%	13	DF=1 not significant
Hobbies	Watching movies	8	47.1%	9	52.9%	17	χ2=1.47 P=0.22
	Others	9	69.2%	4	30.8%	13	DF=1 not significant
Family history	Yes	3	100.0%	0	0.0%	3	χ2=2.54 P=0.11
	No	14	51.9%	13	48.1%	27	DF=1 not significant
Diagnosis	SOL	10	55.6%	8	44.4%	18	χ2=0.02 P=0.88
	CVA/Head injury	7	58.3%	5	41.7%	12	DF=1 not significant
Allternative pain relieve	Balm/Massage/ oil	10	55.6%	8	44.4%	18	χ2=0.02 P=0.88
	Others	7	58.3%	5	41.7%	12	DF=1 not significant
Duration of illness	< 3 yr	11	45.8%	13	54.2%	24	**χ2=5.73 P=0.02***
	> 3 yrs	6	100.0%	0	0.0%	6	**DF=1 significant**

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001.

Table no 17 shows the association between demographic variables and their level of pain in experimental group. Age, sex and duration of illness are significantly associated with their post test level of pain . p value in association between the age and posttest pain value ,duration of illness post test pain value is 0.02 which is significant and the chi squre value of sex and post test pain value is 0.02, which is highly significant. Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.



(Fig.16)ASSOCIATION BETWEEN THE POST TEST LEVEL OF PAIN SCORE AND DEMOGRAPHIC VARIABLE

The above figure describe the post test level of pain score and the association between the demographic variable .it is showing that perception of pain increases with the increase of age. In the association of sex the females or more vulnerable to the pain perception than the male. Pain perception decreases with the duration of illness means the people who are exposed to longer period of illness perceive no pain

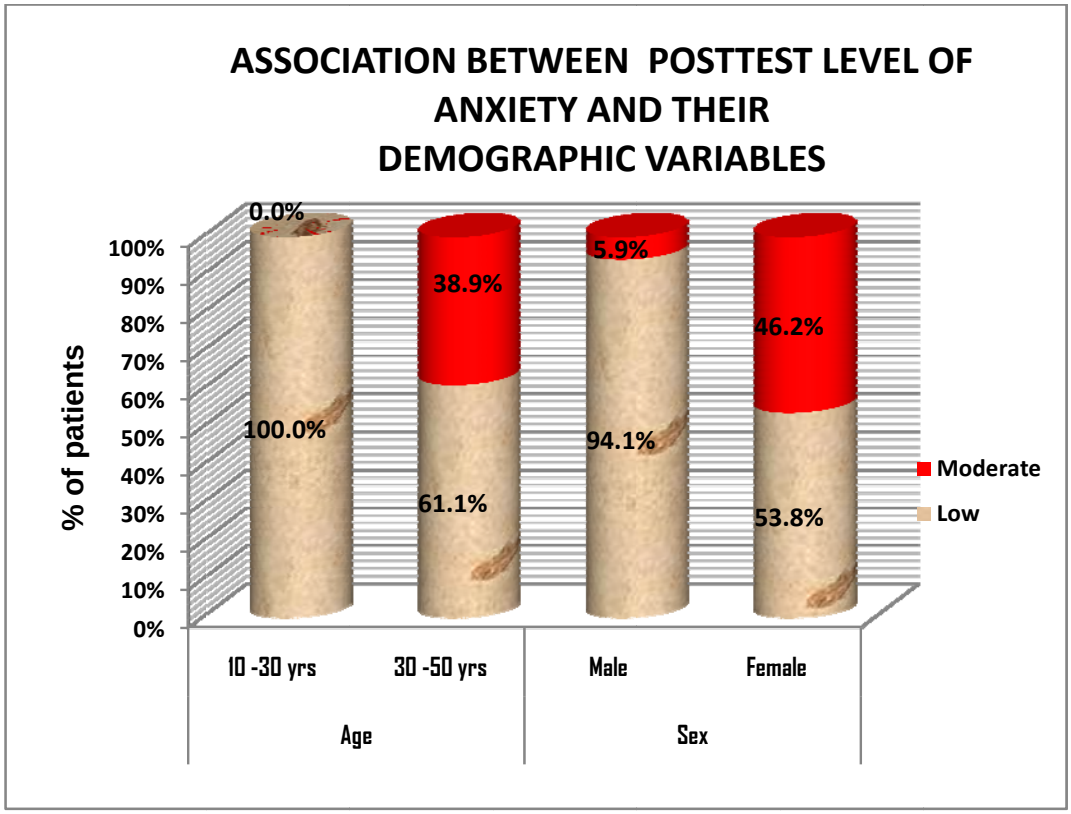
Table 18

ASSOCIATION BETWEEN POSTTEST LEVEL OF ANXIETY AND DEMOGRAPHIC VARIABLES(Experiment group)

		LEVEL OF ANXIETY					Chisquare test /Yates corrected chi square test
		Low		Moderate			
		n	%	n	%	Total	
Age	10 -30 yrs	12	100.0%	0	0.0%	12	**$\chi 2$=8.86 P=0.01***
	30 -50 yrs	11	61.1%	7	38.9%	18	**DF=1 significant**
Sex	Male	16	94.1%	1	5.9%	17	**$\chi 2$=6.67 P=0.01****
	Female	7	53.8%	6	46.2%	13	**DF=1 significant**
Habits	Yes	15	88.2%	2	11.8%	17	$\chi 2$=0.01 P=0.97
	No	8	61.5%	5	38.5%	13	DF=1 not significant
Hobbies	Watching movies	13	76.5%	4	23.5%	17	$\chi 2$=1.01 P=0.31
	Others	10	76.9%	3	23.1%	13	DF=1 not significant
Family history	Yes	3	100.0%	0	0.0%	3	$\chi 2$=2.54 P=0.11
	No	20	74.1%	7	25.9%	27	DF=1 not significant
Diagnosis	SOL	12	66.7%	6	33.3%	18	$\chi 2$=2.51 P=0.11
	CVA/Head injury	11	91.7%	1	8.3%	12	DF=1 not significant
Alternative pain relieve	Balm/Massage/oil	11	61.1%	7	38.9%	18	$\chi 2$=0.02 P=0.88
	Others	12	100.0%			12	DF=1 not significant
Duration of illness	< 3 yr	20	83.3%	4	16.7%	24	
	> 3 yrs						$\chi 2$=2.98 P=0.08
		3	50.0%	3	50.0%	6	DF=1 not significant

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001.

Table no 18 shows the association between demographic variables and their level of anxiety in experimental group Age, and sex are significantly associated with their pretest level of anxiety. Statistical significance was analyzed using Pearson chi square test/ Yates corrected chi square test.



(Fig. 17) ASSOCIATION BETWEEN THE POST TEST LEVEL OF ANXIETY SCORE AND THEIR DEMOGRAPHIC VARIABLES

From the above said figure it is clear that the age and anxiety are negatively correlated as age increases the anxiety decreases in age group of 30-50 nearly 61.1% of the people perceive low level anxiety. I n the same way sex have an association with the anxiety level. Females have a higher level of anxiety comparing to males. That is only 5.9% of male have moderate level of anxiety in the post test assessment where as the females 46.2% of them scoring moderate level of anxiety.

CHAPTER – V

DISCUSSION

This chapter deals with the discussion of the study with appropriate literature review, statistical analysis and findings of the study based on objectives of the study.

The aim of the study to was to evaluate the effectiveness of foot massage on pain and anxiety among the neuro postoperative patient in Government Rajaji Hospital, Madurai. A Quasi experimental 2 group nonequivalent pretest, posttest design was used to assess the effectiveness of foot massage on pain and anxiety among the post operative patients.

Total 60 neuro postoperative patients were selected from the ward with craniotomy incision. The samples were selected non probability purposive sampling method. A pretest was conducted with numerical pain and state trait anxiety scale for all the craniotomy patient and the patients with pain scale more the 3 and at the anxiety of mild to moderate anxiety selected for the study.

MAJOR FINDINGS OF THE STUDY

The first objective of the study was to assess the level of pain of neuro post operative patient.

On evaluating the result displayed that an average of 6.37 (63.7%) pain score in experimental group and 6.3 (63%) of pain level in control group felt among the post operative patient. Before the massage both in the experimental and control group more than 50% of them came under the criteria of moderate pain and 46.7% of the experimental group and 43.3% of the control group have severe pain.

Tanyakhanok Pongpiyapibon(2005), conducted a study to assess the effectiveness of foot reflexology among the prostatectomy patients find that their pre test pain score is (X = 7.230that is 72.3% on an average.comparing to that pre test score in my study is 63.7%.

Thibault M, et all.(2005) conducted a study Canada. The aim of the study is to assess the intensity of postoperative pain in relation to the location of craniotomy among 299 subjects. The severity of post-craniotomy pain was assessed by collecting scores obtained using an 11-point verbal rating scale for the 48 hr postoperatively. Data were compared according to the craniotomy location. On average, the result revealed that 76% of patients experienced moderate to severe postoperative pain.

The second objective of the study is to assess the level of anxiety among the neuro postoperative patient. Almost in both experimental and control group, the anxiety level of the patient is more than 58% that is experimental group 59.43 and in control group 58.37 among them more than 80% is the experimental and 83% is control group falls into the category of moderate anxiety 20% of the selected population falls into the category of high level of anxiety.

Quattrin R, Zanini et al (2002) conducted a study to examine the effectiveness of reflexology foot massage in hospitalized cancer patients undergoing second or third chemotherapy cycles in University of Udine, Italy find out that an average of 62.5% of anxiety score among the studied population.

The third objective of the study was to assess the effectiveness of foot massage on pain and anxiety with the control and experimental group.

On evaluating the results it shows the pretest experimental patients are having 6.37 pain score and control group patients are having 6.30 pain score. The difference between the two groups is very small that is about 0.07 at pain score. This difference is statistically not significant. The calculate students independent t test showing a value of t-0.23 which is not significant where as is accounting the effectiveness of foot massage is experimental group the reduction of the pain score from 6.37 to a rate of 1.00 after the administration of foot massage.

The foot massage make a fall of 5.37 in the pain score from the baseline. Which is a very significant reduction where as in the control group it can produce a reduction it is about 3.67 is pain score. Even though this is a statistically significant reduction there is a large difference between the experimental group and control group pain reduction. The difference is about 1.63 is between the group to test whether this reduction is a significant

one we used the students independent‘t’ test. The standard deviation of the experimental group is 1.00 ± 1.28 and the standard deviation of the control group is 2.63 ± 1.61. By using students independent‘t’ test value received as 4.34 and the P = 0.001 which show a statistically high significance.

To conclude the effectiveness of foot massage is highly significant is evidenced by a P value of 0.01. On comparison of Day wise pain score the table 16 shows that there is no significant difference is between control and experimental group on the day one, pre test and post test value. The‘t’ value is tested by student independent‘t’ test. But from the day 2 we can see a very high significant different between the groups. SO the effect of the foot massage starts from the 2nd day onwards.

LaurieBarclay,(2005) Studied Massage is an effective adjunct treatment to relieve acute postoperative pain in patients who had major surgery,. Preintervention vs postintervention effects were greater in the massage group than in the control group for reduced pain intensity ($P = .001$), pain unpleasantness ($P < .001$), and anxiety ($P = .007$). Compared with the control group, patients in the massage group also had a faster rate of decrease in pain intensity ($P = .02$).

In comparing the **anxiety** score is pretest the anxiety level is 59.43 and the anxiety level of the control group is 58.37. The difference is 1.00 and which is statistically not significant by testing with independent‘t’ test. In post test, experimental group patients are having 28.00 anxiety score and control group patients remains on the anxiety level of 38.90. There is a difference of 10.90 between the control and experimental group anxiety score. This difference is very high and it is been tested with students independent ‘t’ test. The t value received as 4.34 and the P = 0.001. This is highly significant, conforming that effectiveness of massage is high.

Dr. Brent Bauer (2009) did a randomized control trail study on the Two hundred patient who underwent and CABG and/or cardiac valve surgery to evaluate the effect of 20 minute massages on patient reported pain, anxiety and tension. He find that there was a statistically significant difference in pain on day 3 for those patients who received standard care (-0.6±2.2, p=0.02). There was a statistically significant difference in the

change in tension (-1.0±0.3) on day 2 and change in pain (-1.0±0.2), tension (-1.5±0.3) and anxiety (-1.4±0.3) on day 4 between the two treatment groups (each p<=0.01).

The fourth objective of the study to associate selected demographic and clinical variables with pain and anxiety among the neuro postoperative patient. The table 17 associates the level of pain with the demographic variables. Which shows a association of the level of pain with the sex. The females having higher level pain comparing with males. The table 18 describes the anxiety level is higher is the patient in the age group of older that is 30 – 50 years than the younger and also females have higher anxiety level.

Mohammad Faisal Jafar (2009**)** conducted a study in a population of 300 clients who have admitted for surgery to measure the frequency of post operative anxiety in patients admitted to the hospital found that Significant postoperative anxiety was seen in 62% patients (73% females and 42% males). Frequency of anxiety decreased with advancing age but increased with higher educational status. A total of 77% of patients with no previous exposure to surgery and 26% of patients who had previous surgery, were anxious. Also 49% of patients who had visited the clinic and 86% of patients who had not visited the clinic were anxious.. Frequency of post operative anxiety was 62%. Female gender, younger age and higher educational status were positively correlated while prior experience of surgery while preoperative anesthesia clinic visit were negatively correlated with anxiety.

CHAPTER – VI

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter represents summary, findings, conclusion, implications and recommendation which create a base for evidence based practice.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of foot massage on the level of pain and anxiety among the neuro post operative patient is government Rajaji hospital, Madurai.

SUMMARY OF THE STUDY:

The study was conducted in Government Rajaji Hospital, Madurai. The population of the study were selected from neuro postoperative ward 217. Purposive sampling technique used to select the patient. There were 60 patient selected for the study with the predetermined criteria for inclusion.

The tools for data collection were

Part – I(A)	:	Demographic variable
Part –I(B)	:	Clinical Variable
Part – II	:	Modified state anxiety scale
Part – III	:	Numerical rating pain scale

The content validity of the tool was established with the help of 5 experts. After pilot study reliability of the tool of the modified state trait anxiety scale was assessed by using split half method. Correlation coefficient are 0.81 and 0.85. These coefficient is very high and it is good tool for assessing the effectiveness of foot massage among the postoperative patient. The pain scale is a already standardized tool.

The main study was conducted between September 1st 2011 to 30th September 2011. The data obtained were analyzed using both descriptive and inferential statistics. The level of significance of the hypothesis was set at 0.05.

The conceptual framework for the present study was based on Roy's adaptation model. The focus of the theory is adaptation of the individual to various stimuli both from the environment and from within.

The variables of the present study were independent variable, foot massage, and the dependent variable pain and anxiety.

The investigator used nonequivalent two group research approach to assess the impact of foot massage on the level of pain and anxiety among the postoperative patients in neuro postoperative ward.

The findings of the study showed there was very high significant difference between the posttest score of pain and anxiety in foot massage treated group and non treated group.

The significant difference of pain level between the experimental and control group (t = 4.34 P = 0.001 which is very high). In the same way the anxiety level also show a difference between the experimental and control group (t = 4.34 P = 0.001).

6.1 FINDINGS

This study attempted to find out the impact of foot massage on the level of pain and among the neuro postoperative patient.

- The pre foot massages pain and anxiety score is significantly higher than the post test value of the experimental group.
- There was a significance difference between the experimental and control group posttest value.
- There were some association between the age and pain level and anxiety and sex and duration of illness.

6.2 CONCLUSION

On the whole, carrying out present study was really an enriching experience to the investigator. The constant encouragement and guidance by the guide, cooperation and interest of the respondents to participate in the study contributed to the fruitful completion of the study.

6.3 NURSING IMPLICATION:

The findings of this study have brought out certain implications in the area of nursing practice, nursing education, nursing administration and in research also.

IN NURSING PRACTICE:

The above study has following implications on nursing practice

- The study enhanced that the massage can be utilized in busy schedule of nursing practice.
- The findings of the study help to eliminate the unwanted use of costly medication and provision of care with the limited cost especially for pain and anxiety
- The study encourage the nursing and non nursing health personal to practice massage therapy for the reduction of pain or anxiety in the care of their clients
- It encourages the nursing personal to learn massage or any alternative therapy, to be certified to practice the same in clinical settings.

IN NURSING EDUCATION:

The above study has following implications on nursing education

- The study alert the nurse educator to include the massage and alternative medicine in nursing education process and also it encourage the inclusion of practical session of massage therapy in the field of nursing.
- The study can be utilized as a base for further research can be conducted on the same field.
- The study showed that the post graduate students can conducted many in service program for the staffs regarding alternative therapy specifically the foot massage.

NURSING ADMINISTRATION

The above study has following implications on nursing administration

- ❖ The study has made a ring to the administrator, to develop nursing practice standards, protocols, and manuals for pain and anxiety management.
- ❖ It provided a indication for the administrator that they can arrange for many in-service program for their staff and they can also undergo the training program for foot massage.
- ❖ It also encourages the administrative section to allot fund to conduct research program in this section of massage.

NURSING RESEARCH

The above study has following implications on nursing research

- ❖ The study will be a valuable reference for future researcher
- ❖ The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted.
- ❖ Foot massage therapy can be studied more scientifically and used for specific nursing intervention.

6.4 RECOMMENDATION

The investigator recommends the following studies to strengthen the nursing care

1. The study can be replicated on larger sample.
2. This study can be conducted on other areas of surgeries, like general surgery and medical care area.
3. This study can be conducted by using different research design like true experimental study.
4. A comparative study can be conducted with different group of population and different mode of nonpharmacological therapy.
5. Similar study can be conducted with increasing the duration of intervention, and along with other complementary therapy.

6.5 SUGGESTION

1. Complementary therapy cell can be arranged in the institution and multi disciplinary team could be introduced.
2. Pain and anxiety assessment and management should be given emphasis is post operative nursing care practice.
3. Non pharmacological methods of pain management should be emphasized in nursing curriculum
4. Nurses can be educated with complementary and alternative therapies for pain and anxiety management.
5. Nurses can educate the family members regarding foot massage in the care of their patients.

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CERTIFICATE OF VALIDATION

This is to certify that the tool,

Part – I A: Demographic variables

Part – I B: Clinical variables

Part – II: Modified State trait anxiety scale

Part – III: Numerical rating pain scale

Prepared by V.Sheela Vargheese 1 year M.Sc (N) student of Government Rajaji Hospital, Madurai who has undertaken the study field titled of "A study to assess the effectiveness of foot massage on the level of pain and anxiety among the neuro postoperative patients in Government Rajaji Hospital, Madurai" has been validated by me.

SIGNATURE OF THE EXPERT

NAME: B. SARA

DESIGNATION: READER IN NURSING

DATE: 15/04/11

CERTIFICATE OF VALIDATION

This is to certify that the tool,

Part – I A: Demographic variables

Part – I B: Clinical variables

Part – II: Modified State trait anxiety scale

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SIGNATURE OF THE EXPERT

NAME: R. DEEPA

DESIGNATION: ASSO. PROF

DATE: 10.4.11

CERTIFICATE OF VALIDATION

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Part – I A: Demographic variables

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SIGNATURE OF THE EXPERT

NAME: M JASLINE

DESIGNATION: PROFESSOR

DATE: 27.4.11

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CERTIFICATE OF VALIDATION

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SIGNATURE OF THE EXPERT

NAME: N. SURESH KUMAR

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DATE: 24/1/12

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CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation "A study to assess the effectiveness of foot massage on the level of pain and anxiety among the neuro postoperative patients in Government Rajaji Hospital, Madurai" done by Mrs.V.Sheela Vargheese, M.Sc., Nursing II year student, College of Nursing, Madurai Medical College, Madurai - 20 has been edited for Tamil language appropriateness.

Name: S. SELVI

Designation: H M

Institution:

25/1/12

Signature

தலைமையாசிரியர்
உ.ஒ. நடுநிலைப்பள்ளி
கஸ்தூரி நாயக்கன்பாளையம்
வடவள்ளி (P.O)

CERTIFICATE OF ENGLISH EDITING

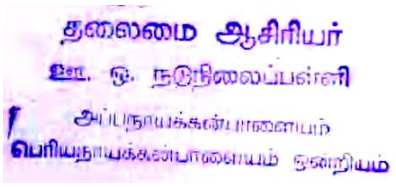
TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation "A study to assess the effectiveness of foot massage on the level of pain and anxiety among the neuro postoperative patients in Government Rajaji Hospital, Madurai" done by Mrs.V.Sheela Vargheese, M.Sc., Nursing II year student, College of Nursing, Madurai Medical College, Madurai - 20 has been edited for English language appropriateness.

Name:

Designation:

Institution:



THE VALLIAMMAL INSTITUTION (TVI)

11/6 B.B. Road 2nd St., Pankajam Colony , Madurai-625 009.
✆ 98942 49630 email: ananthibetsy@rediffmail.com

Certificate Course in Counselling and Foot Massage

Reg. No. PCC/21/July 2011/160 Date: 10/07/2011

This is to certify that **Ms. SHEELA VARGHEESE .V**

has completed our **CERTIFICATE COURSE IN COUNSELLING AND FOOT MASSAGE** *(24hrs Part-time Education Programme designed and offered by experts) by effectively particpating in theory & practical classes and successfully completing all the exercises. She has been placed in* **FIRST CLASS**

THE VALLIAMMAL INSTITUTION (TVI) 11/6 B.B. Road 2nd Street, Pankajam Colony, Madurai-625 009.

Prof. Dr. S. Jeyapragasam M.Sc.,M.A.,M.A.,Ph.D.,
Director
Rajarajan Institute of Science (RISE)

Dr. B. Ananthi M.Sc.,M.A.,M.Phil.,Ph.D.,
Director & Secretary
The Valliammal Institution (TVI)

Ref.no.23339/E4/3/09 dt 09.05.11. Govt. Rajaji Hospital, Madurai – 20.

INSTITUTIONAL REVIEW BOARD / INDEPENDENT ETHICS COMMITTEE

Govt Rajaji hospital and Madurai Medical Collage, Madurai 625020.

Proceedings and recommendations of the IRB / IEC meeting held on 31.03.20 11

The Institutional Review Board/ Independent Ethics Committee of the Govt. Rajaji Hospital and Madurai Medical College, Madurai 625020 met on the 31.03.2011 at 12 noon, when the following members were present.

---

1. Dr.S.M.Sivakumar, M.S (Gen. Surgery)	M.S, Govt. Rajaji Hospital, Madurai.	Convener
2. Dr.N.Vijayasankaran, M.Ch (Uro.)	Sr. Consultant Urologist Madurai Kidney Centre, Sivagangai Road, Madurai	Chairman
3. Dr.T.Meena, MD or Dean I/c (MMC)	Professor of Physiology, Madurai Medical College	Member
4. Dr.Moses K.Daniel MD (Gen.Medicine)	Professor of Medicine Madurai Medical College	Member
5. Dr.M.Gobinath, MS (Gen. Surgery)	Professor of Surgery Madurai Medical College	Member
6. Dr.B.K.C.MohanPrasad, M.ch, (Surg. Oncology)	Professor of Surg.Oncology Madurai Medical College	Member -Secy.
7. Shri.M.Sridher, B.Sc.B.L.	Advocate, 623-B.ll.Floor, East II Cross, K.K.Nagar, Madurai.20.	Member
8. Shri.O.B.D.Bharat, B.sc.,	Businessman Plot No.588, K.K.Nagar.Madurai.20.	Member
9. Shri.S.Sivakumar, M. A (Social) M.Phil	Sociologist, Plot No.51 F.F, K.K Nagar, Madurai.	Member

The Committee considers the 45 dissertations / research / study Proposal submitted by PG students / Non Medical students from outside the institution as per agenda. After discussion, the following dissertations I records / study proposals are approved.

Mrs.V.Sheela Vargheese	Second Batch M.Sc Nursing M.M.C Madurai.	A study to assess the effectiveness of foot massage on the level of pain and anxiety among the neuro postoperative patients in Government Rajaji Hospital, Madurai

Medical Superintende
PART – I (A)
DEMOGRAPHIC DATA

Circle the relevant data about you in the following statements.

1. Age in years

   a.20

   b. 21 to 30

   c. 31 to 40 ( )

   d. 41to50

   e.51 to 60

2. Sex

   a. Female \

   b. Male ( )

3. Habits

   a. Alcohol

   b. Tobacco chewing ( )

   c. Betal chewing

   d. None of the above

4. Hobbies

   a. watching tv

   b. Listening music ( )

   c. Reading books

   e. None

5. Family history of Neuro diseases.

   a. Yes ( )

   b. No

PART – I (B)

DISEASE FACTORS

Instruction

This section seeks information regarding clinical variables such as diagnosis, duration and medication. The interviewer will check the records of the patient / ask the item and fill the details.

1 .Diagnosis:_____

2. Known duration of illness

a) Less than a year

b) 1-2 year's

c) 2 -3years ( )

d)3-4yrs

e)4-5yrs

f)5 -6yrs

g)>7yrs

3. Have you tried any alternative pain relievers?

a) Balm ( )

b) Oil

c) Massage

d) Any other _____ specify

4.vital signs

Temp BP

Pulse Resp

PART - II

MODIFIED SPIEL BERGERS STATE ANXIETY INVENTORY INSTRUCTIONS:

Below are given 25 statements indicating your state of anxiety. There is no right or wrong answer. Circle the appropriate number to the right of the statement to indicate how you feel now.

S.NO	**QUESTION**	**Not at all 1**	**Some what 2**	**Moderately so 3**	**Very much so 4**
1.	* I feel calm				
2.	*I feel secure				
3.	I feel tensed				
4.	I feel strained				
5.	I feel at ease				
6.	I feel upset				
7.	I am presently worrying over possible misfortunes				
8.	* I feel satisfied				
9.	I feel frightened				
10.	* I feel comfortable				
11.	* I feel self confident				
12.	I feel nervous				
13.	I am jittery				
14.	I feel confidence				
15.	I am relaxed				
16.	I feel content				
17.	I am worried				
18.	I feel confused				
19.	I feel steady				
20.	I feel pleasant				
21	***I am confident that I will have a** fast recovery				

S.NO	QUESTION	Not at all 1	Some what 2	Moderately so 3	Very much so 4
22	I am anxious about my level of activity after surgery				
23	I am anxious about my dependency on people for my daily activities after surgery				
24	I am anxious about which I have to follow after surgery				
25	I am anxious about when can I go back to work				

Note: * - Reversed items

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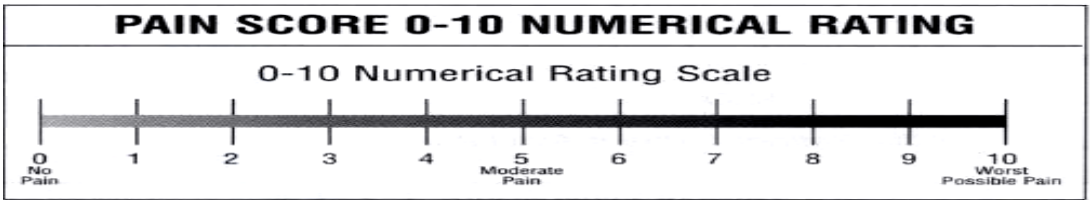
PART III

NUMERTICAL PAIN INTENSITY SCALE

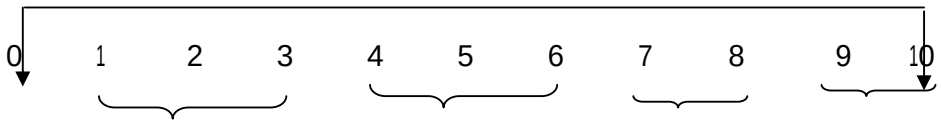
(Look at this scale and points to a number according to the pain you experience smaller the number, lesser pain and higher the number, greater the pain)



Pre –test and Post test	No pain	Mild pain	Moderate pain	Severe pain	Worst possible pain
Pre test 1st day					
Post test1st day					
Pre test 2nd day					
Post test 2nd day					
Pretest 3rd day					
Post test 3rd day					
Pre test 4th day					
Post test 4th day					

T¼Ym – C

YÄdLô] Gi ½PlThP A[îúLôp



YÄ CpûX úXNô] YÄ A¾L YÄ L¼] YÄ úUôNUô] YÄ

	YÄ CpûX	úXNô] YÄ	A¾L YÄ	L¼] YÄ	úUôNUô] YÄ
1-UNô_þdá êu					
1- UNô_þdá Àu					
2-UNô_þdá êu					
2- UNô_þdá Àu					
3-UNô_þdá êu					
3- UNô_þdá Àu					
4-UNô_þdá êu					
4- UNô_þdá Àu					

T¼Ym – B

¾ì j¾VûUdLlThP vÀpùToLo-ºu U] EVoûY

U¾lÀåm Th¼Vp

ÀuYìm 25 ÏtñLs EeLs U] EQoûYl TtÈ úLhLlThås[]. C¾p NÃ/RYñ Guñ T¾p ¸ûPVôç. CYtÈp NÃVô]ç Guñ ¨eLs EQoYûR YhPÁPîm.

Y. Gi	ÏtñLs	CpûX 1	KW[î 2	ÁRUô] A[î 3	A¾L A[î 4
1 *	Sôu AûU¾ ¿ûXÂp Cìd¸\RôL EQo¸ú\u.				
2 *	Sôu TôçLôlTôL Es[RôL EQo¸ú\u.				
3	Sôu U] CñdLjçPu Cìd¸ú\u.				
4	Sôu U] AïjRm ClTRôL EQo¸ú\u.				
5 *	Gu U]m CXáYôL ClTRôL EQo¸ú\u.				
6	Sôu Tô¾lTûPkç ClTRôL EQo¸ú\u.				
7	YWlúTôám çW¾oxPeLû[¿û]jç RtúTôç YìjRlTå¸ú\u.				
8 *	Sôu ¾ìl¾ëPu ClTRôL EQo¸ú\u.				
9	Sôu TVlTåYRôL EQo¸ú\u.				
10 *	Sôu ùN[LÄVUôn ClTRôL EQo¸ú\u.				
11 *	Sôu Ru]mÀdûLëPu ClTRôL EQo¸ú\u.				
12	G]dá SådLm ClTRôL EQo¸ú\u.				
13	Sôu ¾ûLdLiú\u.				
14	Sôu ê¼î GådL ê¼VôRYo úTôp ¿û]d¸ú\u.				
15 *	Gu U]m AûU¾VôL ClTRôL				

	E Q o ¸ ú \ u .				
16 *	Sôu Ru] mÀdûLëPu C ì lTRôL E Q o ¸ ú \ u .				
17	Sôu LYûXëPu C ì d ¸ uú \ u .				
18	Sôu U] dáZlTjçPu C ì lTRôL E Q o ¸ ú \ u .				
19	Sôu U] Eñ¾ëPu C ì d ¸ ú \ u .				
20 *	Sôu U ¸ r f ºVôL C ì lTRôL E Q o ¸ ú \ u .				
	Gu ò ûPV úSôÂ] ôp ùNVpLÇp HtThP Uôt \ eLs				
21 *	Sôu £d ¸ WUôL á Q UûPúYu G] Smé ¸ ú \ u .				
22	Gu ò ûPV BTúWNu G] ùNVp ¾ \ uLÇp Uôt \ m HtTåjçúUô? G] úVôºd ¸ ú \ u .				
23	Sôu Añû Y º ¸ fûNdál Àu Gu ¾] NÃ úRûYL ðdLôL C ì dL Y ì úUô G] LYûX AûP ¸ ú \ u .				
24	Sôu ®h¼t á ùNu \ Àuém CkR YÁ ùRôP ì úUô G] LYûX AûP ¸ ú \ u .				
25	Sôu Gl ùTôï ç úYûXdál úTôL ê¼ëm G] LYûX AûP ¸ ú \ u .				

ஒப்புதல் அறிக்கை

தேதி:

எனக்கு இந்த ஆய்வைப்பற்றிய முழு விவரம் விளக்கமாக எடுத்துரைக்கப்பட்டது. இந்த ஆய்வில் பங்கு பெறுவதில் உள்ள நன்மைகள் மற்றும் தீமைகள் பற்றி நான் புரிந்து கொண்டேன். நான் இந்த ஆய்வில் தானாகவே முன்வந்து பங்கு பெறுகிறேன். மேலும் எனக்கு இந்த ஆய்வில் இருந்து எந்த நேரமும் விலகிக் கொள்ள முழு அனுமதி வழங்கப்பட்டுள்ளது. என்னுடைய சிகிச்சை ஆவணங்களைப் பார்வையிட்டு அதில் உள்ள விவரங்களை ஆய்வில் பயன்படுத்திக் கொள்ள அனுமதி அளிக்கின்றேன். என்னுடைய பெயர் மற்றும் அடையாளங்கள் ரகசியமாக வைத்துக் கொள்ளப்படும் என்றும் எனக்கு உறுதியளிக்கப்பட்டுள்ளது.

இப்படிக்கு,

PROCEDURE FOR FOOT MASSAGE

DEFINITION

Foot massage is a technique by which both the feet of the recipient are held at various positions, stroked gently and rhythmically to attain a relaxation response.

TOTAL DURATION OF PROCEDURE:

20 minutes.

PREPARATION OF ENVIRONMENT

- A conducive room free of noise and foul smell, with adequate temperature and light.

EQUIPMENTS AND SUPPLIES

- A comfortable, firm bed/couch with thin mattress, a soft pillow for the head (if needed) and a hard pillow to keep the feet raised.
- A towel long enough to spread below the feet and to cover the feet from the sides.
- Oil or lotion
- The masseur should take a position to do massage, preferably standing.

PREPARATION OF THE PATIENT

- Get informed consent from the patient and a witness.
- Explain the procedure to the patient.
- Have the patient in loose clothing.
- Have the foot washed and cleaned.
- Explain that one close relative can stay along and learn the technique, so that it can be carried on at home.

Avoid distraction in the environment.

PROCEDURE

1. Let the patient lie in supine position on the bed with the head on a soft pillow.

2. Raise the feet over a hard pillow allowing the heels to hang loose at the foot end of the bed.
3. Focus on the well being of the patient in an act of unconditional love and caring.
4. Assess both the feet.
5. Look for contraindications such as cuts / wounds / ulcerations / swelling / fractures / toe deformities / extreme arthritic pain.
6. Examine the feet for color, crease indicating pressure, cleanliness and condition of nails and skin.
7. Warm up the palms by rubbing it against each other.
8. Take 'oil or lotion in your hand and apply it gently to both feet of the patient spreading it evenly.

Basic Technique

- Choose a balm or cream. Oil is gooey and lotion absorbs too fast.
- Begin by sitting or standing facing the soles of their feet. Place your hands such that your fingers are on the top of their foot and your thumbs are on the pad. The first strokes should be firm enough not to tickle, but light enough that they don't hurt. Remember, feet are bony.
- Travel up and down the foot. Fingertips are going from the base of the toes to the front of the ankle and back, and thumbs are going from pad to arch and back.

- Now concentrate on the pad of the foot. This area can usually withstand a bit more pressure. Use your thumbs to work in circular motions.
- The arch of the foot can usually take light-to-moderate pressure. It's an easy area to see. Again, use your thumb to work in circles or an up/down stroke with the emphasis of the pressure on the up.

- Standing to the side of the foot, grab it with both hands and gently "wring" it out like you would a wet washcloth. Again, fingers should be on the top of the foot and thumbs on the bottom.
- Coming back to your starting place, gently work between the bones on the top of the foot. There isn't much space in there, but all you have to do is let your fingers glide in the space.
- Now for the heel - again, circular motions with the thumb. Be sure to get the back of the heel as well by gently lifting the foot, placing the back of the heel in your hand, and letting your hand glide toward you. This makes a nice hand-over-hand technique.

- The toes will be wanting some attention as well. Again, be gentle. You don't really want to place your whole finger between toes for fear of disjointing or splitting the skin. Simple use the palms of both hands to give them a light rub, and then gently pinch each toe between your index finger and thumb and pull up with a gliding motion.

- A lovely finishing touch is to work on the sides of the ankle. With one hand on each side, use your fingertips to work small circles around the outside of the bony area.
- Return to the first stroke technique for the finale. You want to start and finish with the warmth of your hands contacting the foot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